

Historic, Archive Document

Do not assume content reflects current scientific knowledge, policies, or practices.



LILIUM PARDALINUM



SEPTEMBER, 1887.

THE HEAT and the dry weather the past summer have affected unfavorably most of the cultivated crops of this country. It has been a remarkable season on account of the high temperature which has prevailed, with but few intermissions, during the three months that have just passed. Over a large region of territory, from the central part of this State westward to the Rocky Mountains, there has been for the same period a deficiency of rain, this deficiency being greatest in the States lying on the Mississippi River and westward, Illinois, Wisconsin, Minnesota, Iowa, Dakota, Nebraska and Kansas, and the region beyond have suffered most severely, but Michigan, Indiana, Ohio and the western half of this State have had their crops badly shortened by the same causes. An additional source of loss has resulted from the depredations of insects, favored by heat and dryness, which have bred with great rapidity. A short harvest of wheat, hay, grain and potatoes will be general, except in the Eastern and some of the other Atlantic States. In all this troubled region there have been here and there scattered localities of moderate areas that have been favored with showers sufficient to bring on the crops in fair condition. So there are some few among the many cultivators that have been extremely fortunate.

Garden vegetables and small fruits have especially suffered from the heat and drought, and cases are reported of Apple trees, that have been well set, dropping their fruit, all for the lack of moisture. Light and poor soils and lands insufficiently drained have been most seriously affected, while well drained, well manured lands that have been properly worked have produced the best results, especially when planted early and crops were well advanced when the hot weather came. These facts indicate the line on which the successful cultivator should work. In regard to underdraining, we are sorry to see that there is tendency on the part of some to misinterpret facts and to lay at the door of this most important process the very evils which it averts. A Chicago publishing house is soon to issue a book wherein this subject is considered, and which will contain the author's opinions, already given through the press, that "the result of this wholesale draining of the upper country of water is not only thus disastrous to life and property along the larger streams, from frequent overflow, but there is such absolute drainage of moisture from the earth as to produce severe drouth, accompanied by such intense heat and dryness of atmosphere as results in the hurricane, the cyclone, and innumerable village, prairie and forest fires.

"In the early days when the process of evaporation went forward from the swamps, the ponds and lakes of our Western and Middle States, an extended drouth, with extremely intense heat, was a rare occurrence. In those days sun-stroke was very uncommon, and the cyclone was comparatively unknown. This year we are in the second season of drouth in various portions of the country, while every year brings its devastation from wind, the result of an excessively dry and frequently disturbed condition of the atmosphere."

Such ideas, in our opinion, are too crude to find acceptance even by those who have given but little attention to meteorological subjects. Crops on low, undrained land are always the first to be injured in time of drouth, while those on well drained and well cultivated lands suffer least. Frequent stirring of the soil is the best way to guard a crop against injury from drouth. It promotes evaporation, but it induces a movement of moisture in the soil from below upwards. The causes of hurricanes and cyclones cannot be so summarily stated, or at least the statements cannot be accepted by intelligent people who will examine all the facts that are known in connection with them. We have no fear that enterprising farmers, gardeners and fruit-growers will neglect to drain their lands for fear of cyclones, and shall, therefore, utter no caution to this effect.

It is a very trustworthy observation that a season following a drouth produces large crops. This is consoling, and we may take heart and go forward with an expectation of a better reward for our toil another year. Fall plowing and fall spading of all heavy and moderately heavy lands will be one of the best preparations that can be made this year for next year's crop; it will also favor early working in the spring, and so enable one to get a good start. It may be well to consider how the dry weather, if it should continue, may affect some kinds of fall work. As to Strawberry plants, unless they can be watered and mulched, it would be inadvisable to put them out in great numbers; better defer the work until spring. A garden supply can easily be taken care of, so the earlier they are got in the better it will be for them, for they can make a strong growth this fall,

if properly tended. As the ground is very warm vegetation will be quick if the fall rains should be plentiful; for this reason we think it will be advisable in the Northern States to defer sowing Spinach seed until late in the month, after which it will make all the growth needed before cold weather sets in. Cuttings of Currants and Gooseberries planted this month will root quickly, especially if they can be watered and mulched; they will make a much stronger growth next season than if left to be put out in the spring. Transplanting operations will not take place until next month, and by that time the rains may be general and allow all kinds of work to proceed as usual. Should they not come sufficiently early, however, the labor of digging many kinds of nursery trees will be very heavy, and a good degree of caution and self-control will be necessary to take out the roots and not cut them off.

Lawn-seeding can go on all through the month, with the chance that the grass, even on late sown pieces, will be strong before winter sets in.

During this month it will be necessary to give attention to the potting of those plants intended for winter blooming, that have been summered over in the open garden. The Calla, or Ethiopian Lily, is one of the most important as it is a general favorite. Use light and rich soil, giving it good drainage that the water which it needs in abundance may pass off rapidly. If the plants are wanted to bloom early, use only five or six-inch pots, and give them no shift, while those for later blooming can be shifted into pots of larger size when the roots reach the outside of the ball of soil, and can be kept on growing. A week or ten days before removing from the ground such plants as Geraniums, Begonia, Chrysanthemums, Bouvardias, and the like, it is a good plan to cut around the roots, leaving a ball of soil somewhat smaller than the pot the plant is to occupy; the result is that a great quantity of fine roots are formed in a short time, and when the plant is potted these roots are ready to feed immediately on the new soil that will be placed between them and the sides of the pot. Seeds of perennials, such as Pansy, Sweet William, Canterbury Bell, Snapdragon, Aquilegia, and Hollyhock should be sown early.

BEGONIA LOUIS BOUCHET.

This fine variety of Tuberous Begonia bloomed with us for the first time this spring, and proved very attractive. The plants are about a foot in height, quite bushy and neat in habit, and the flowers are borne in great abundance, on long, slender stems by which they are usually pendant. The staminate flowers are double, while the female ones are single. The color is a bright scarlet. As a window plant, we think this Begonia will be very generally admired and cultivated;



BEGONIA LOUIS BOUCHET—LEAF AND FLOWER NATURAL SIZE.

and in spots somewhat shaded will probably prove valuable for bedding. CANNELL AND SONS, of Swanley, England, who introduced this variety to the trade, mention it in the following language: "Brilliant orange-scarlet. It is hardly possible that we shall be believed, except by those who have followed us for years, and have purchased plants and have proved what we have said was correct, because we know that, as a rule, novelties are looked upon in a spirit of incredulity. However, the above named double Begonia is the coming plant, and will within a short space of time be seen in every market and window, as the Fuchsia and Geranium, for all the culture it requires is propagation like Dahlias. Next year, put the potato-like root in a five-inch pot, place in a cool greenhouse, near the glass, and it will grow into one of the most lovely shaped plants ever seen; neither disease nor insects seem to attack them, and as a proof of its beauty, we exhibited twenty-four plants at the Royal Botanic Show, in June, 1885, and were awarded a First Class Certificate. It was hailed by all as one of the most striking novelties of the Show. Mr. GOLDRING, the sub-editor of *The Garden*, told us that he was so struck with its beauty, that he went on three occasions to look at it, so charmed was he with its compact habit and usefulness as a coming plant. Connoisseurs of the Begonia advocate very much for monstrous blooms—unless doubles are as large as Pæonies, and singles seven

inches across, they are set aside as poor things, but where real beauty is expected, and from a plant that will grow into pretty shape, and become smothered with lovely blossoms, as this does, it must find its way to everybody's window, and time will prove our prophecy correct."



BEGONIA LOUIS BOUCHET.

We do not think this language over-praises the plant, and believe it will become a very general favorite as soon as it is known.

LILIUM PARDALINUM.

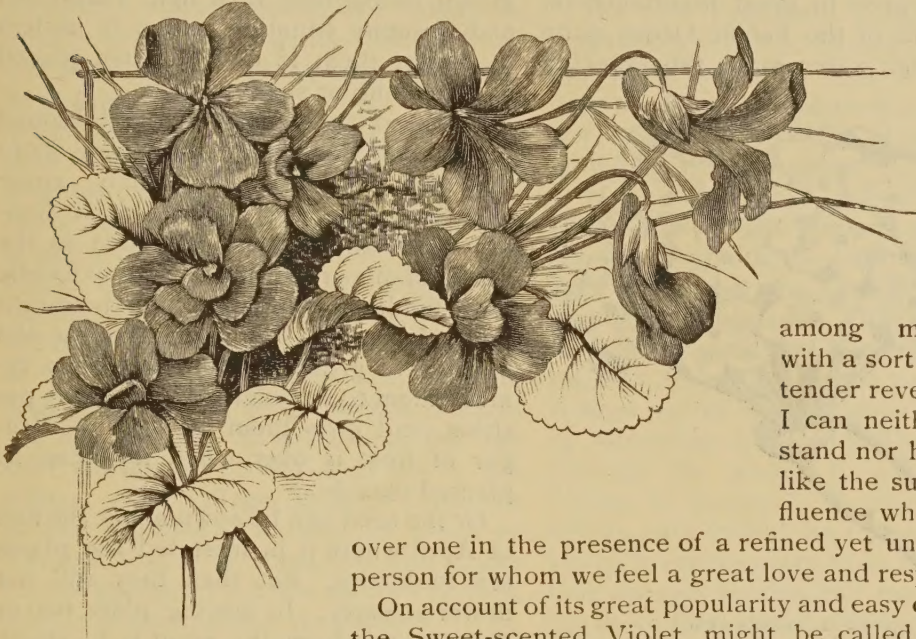
A good representation of this fine Lily is shown in the colored plate of this number. Of all the California Lilies this is the only one that will generally succeed with ordinary garden culture. But this appears endowed with great vigor and vitality, and thrives well in most localities. Its specific name, pardalinum, spotted like a panther, is particularly appropriate. The fine form and bright colors of this Lily make it very showy. The plant grows to a height of four to five feet, with three or four distant whorls of leaves. The blooming season with us is early in July, and, as shown in the plate, there are usually six flowers to each plant. If left undisturbed a few years a very large clump is formed, which gives a great number of blooms. The fertility of the soil can be kept up by a good top-dressing of well rotted manure in the fall which can be lightly forked in in the spring.

Lilium pardalinum belongs to the Martagon section of Lilies, distinguished by the nodding flowers and strongly revolute segments, flowers in racemes, usually of a brilliant red or orange color, and stamens diverging on all sides from the curved style, and a few other characteristics. It is closely associated with *L. Canadense* and *L. superbum* of the Atlantic States, and with *L. Roezlei*, *L. Columbianum* and *L. Humboldtii* of the Pacific coast, and also with a considerable number of species from European and Asiatic sources, among which may be mentioned *L. Martagon*, *L. Chalcedonicum* and *L. tenuifolium*. All these have points so strikingly alike as to indicate at first sight their similar origin.

In its native region *L. pardalinum*, or Panther Lily, is usually found in moist localities, frequently on the banks of streams and in wet meadows, and it could easily be introduced in similar places.

THE SWEET-SCENTED VIOLET.

Among all dainty, delicate, loveable flowers that make us feel better for being near them, the Sweet-scented Violet has no peer. The other flowers in my garden I hoe, or prune, or clip remorselessly and vigorously, but I pull the weeds from



among my Violets with a sort of careful, tender reverence that I can neither understand nor help. It is like the subduing influence which creeps

over one in the presence of a refined yet unpretending person for whom we feel a great love and respect.

On account of its great popularity and easy cultivation, the Sweet-scented Violet might be called either the people's or the poor man's flower. It requires scarcely any heat, indeed, it prefers a cool, moist atmosphere, and will thrive and bloom where almost all fashionable flowers would perish. Those who grow it for show, to boast of its large flowers and perpetual bloom, banish it to seclusion under a sash, in a frame and sunny spot; but those who value its companionship, and love to turn from their work to see the sweet, bright faces nodding at them, and sending perfumed messages, place them in their windows, and enjoy them in the right way.

About the best situation for Violets is a plain board frame on the south side of a building, so that the sash may be tilted on sunny days to receive cool, fresh air. A box or pan set with plants and placed in a south window, in a cool room, is its delight; in a dry, warm atmosphere it quickly turns yellow and refuses to bloom. In my Southern home I can grow them in long, narrow boxes that fit the outside window ledges on the south side, and the flowers are much larger than those inside the room.

I am afraid that if I should attempt to tell you my favorites, I should name them all. The old Neapolitan, light blue, is a very free bloomer, and Marie Louise, a shade darker, a trifle larger sized, and blooms well both in spring and autumn. Belle de Chatenay is pure white, and as double as it is possible to be. These are my old favorites; the new comers, among them Margeurite de Savoie, deep, rare blue, are fast winning my affections. A little bunch of Violets is a badge of refinement at any time, and is the perfection of an unpretending bouquet.

KATE ELLICOTT.

THE ABRONIA.

The Abronias, or as they are often popularly termed, Sand Flowers, are a group of very beautiful low-growing, half-hardy, annual plants, belonging to the natural order Nyctaginaceæ. They are of trailing habit, growing about six inches in height, having prostrate stems which extend for several feet and emit roots freely, somewhat after the manner of the Verbena, which they also resemble in the manner of flowering. The star-shaped, wax-like flowers, which are of a rosy-lilac or waxy

yellow color, are produced in close umbels on long petioles or foot-stalks, in the greatest profusion during the summer months. They are, also, deliciously fragrant.

The *Abronias* are natives of California, where they grow in great luxuriance on the sand hills of the Pacific Ocean quite down to high water mark, thus making



ABRONIA UMBELLATA.

the hills look gay and beautiful where no other vegetation can be found. When well grown the *Abronias* are excellent bedding plants, and they can be also used to great advantage for rockwork or covering rustic stumps, and they can also be

grown as single specimens in the mixed border, and as they flower freely during our hot, dry summer weather, I consider them to be entitled to a prominent place in all collections of choice annuals.

They are plants that can be easily grown, doing best in a light loamy soil and a sunny situation, and it is useless to expect them to do well when placed in low, damp or shady places.

The seed can be sown in a well drained pot or pan filled with turfy loam about the first of April; sow thinly, cover slightly, and place in a warm, moist situation close to the glass. As soon as the young plants are strong enough to handle they should be transferred into three-inch pots. Keep the young plants close and moist until growth commences, then remove them to a cooler and more airy position, and grow them on until all danger of frost is over, when they can be planted outside.

Or the seed can be sown about the first of April where it is intended the plants are to bloom. But then they will not flower so early. In sowing place two or three seeds where the plant is to stand, and remove the husk from the seed in order to facilitate its vegetation. Of the several varieties, *A. arenaria*, with its pure waxy yellow flowers, and *A. umbellata*, rosy lilac, are the most desirable.

CHAS. E. PARNELL, *Queens, N. Y.*

NEW FLOWERS.

One of the best white *Geraniums* I have ever seen is *La Cygne*—the Swan. It is white, indeed; not a touch of any other color in the petals anywhere. Most white varieties have had a tinge of green or a flush of pink, but this sort is white and nothing else. The shape of the flower is better, also, than that of most varieties. True, the petals lack the breadth of those of *William Cullen Bryant* or *Rienzi*, our two ideal *Geraniums* in shape and form, or rather our two realized specimens of an ideal *Geranium*, but they are far from being narrow as those of many kinds are. If it shall prove to be a good winter bloomer it will be a great acquisition.

The Queen of the Belgians is to double *Geraniums* what *La Cygne* is to the singles; it is a great improvement on

Candidissima, which has been at the head of double whites heretofore. It has a flower of fine shape, is not double enough to look like a tuft of white cloth torn into irregular widths, and is a good bloomer, which *Candidissima* was not, at least with me.

But the finest *Geranium* of all, whether old or new, is *Evening Star*. This is certainly magnificent. It has a flower as large as *William Cullen Bryant*; its petals are so broad as to touch each other, giving us a circular flower, which the perfect *Geranium* must always be. But the chief beauty is in its purity of color and tint. There is a circle of salmon-rose near the center of the flower, with a pure white eye, the rest of each petal being of the purest white. It is wonderfully lovely. I know of no flower in which the effect is

more chaste and pure. It is purity itself.

The new *Begonia Giant* is, if possible, an improvement on *B. rubra*. I feel rather diffident about saying this, because I have said so much in praise of the older sort that it sounds almost like unfaithfulness to an old and steadfast friend, but I can say it without taking back anything I have said in favor of *B. rubra*. The flowers of the new variety are not only larger than those of the other, but they are of a brighter crimson; in reality, those of *B. rubra* are not crimson at all, but a very bright coral red, though most of the catalogues call it crimson. When open, the inside of the blossoms of the new variety are much lighter than the outside as seen in the bud. The clusters are borne on long, stout stalks, which, unlike those of the old favorite, do not droop, but are held sturdily erect and well above the foliage. The foliage is large and not shaped like that of *B. rubra* as much as it is like that of *B. metallica*, but, unlike that of the latter, it has a smooth surface, and is a clear green throughout. I do not know whether the new variety will prove to be as free and constant a bloomer as *B. rubra*, or otherwise, but if it should it will prove to be a grand acquisition. It is that now, so far as early summer flowering goes, and as yet it shows no sign of resting, from which I infer that it intends to keep on blooming for some time to come, if not all summer. The florist of whom I obtained my plant assured me that it was really a better winter flowerer than any other variety he had ever grown; if this be so it will be in great demand. I have not seen it in any of this year's catalogues, but I suppose it is being propagated for next season's trade, and that next spring it will be introduced with a great "flourish of trumpets." It affords me considerable satisfaction to be able to speak a good word for it in advance of its introduction by the trade. It is like being taken in for an introduction to the speaker of the evening before the lecture comes off. When you sit in the audience with a friend, a little later, you can have the satisfaction of remarking that you have met the gentleman, and convey the impression that you are quite intimate with him by the indifference with which you regard him. He is not

the curiosity to you that he is to most of the audience. Human nature is pretty much alike the world over, isn't it? We like to get the start of others in all ways. But enough of moralizing after this fashion.

The new *Passiflora*, *Constance Elliot*, is certainly a better bloomer than any of the older varieties that I have ever grown. It began to bloom quite early in the season, last year, and was covered with flowers for months. Its flowers are a pure, ivory white, large and finely shaped, and very pleasing in effect as shown off against the plentiful foliage of the vines. It is one of the best of our greenhouse climbers. I had no difficulty of coaxing my plant into winter flowering. In September I cut it back severely. It soon started into vigorous growth, and by November it began to bloom, and all through the winter it was indeed a "thing of beauty." If grown near the rafters, care should be taken to train the young branches away from the glass, for they are very tender, and the frost striking down from the roof is quite likely to chill them.

Bouvardia flavescens is a charming addition to this delightful family. It is not a pure yellow—it is not decided enough in tone to be that—but it is on the yellow order, and to my mind is prettier than it would be if it were brighter in color. It is of a soft sulphur tint, which will make it as effective among other flowers as the *Plumbago* and the *Ageratum* are, with their delicate lavender blues. It is difficult to find a more charming combination of tints, not colors, for they are not strong enough to be called so, than is made by a cluster of this *Bouvardia* and a bunch of *Ageratum* blossoms emphasized by a few *Daisies* with yellow discs. I made up a little bouquet for a friend, not long since, from these three flowers, and I was quite as much delighted with the result as she was. Of course, a bit of scarlet or vivid pink would have made it much brighter, but it was the delicacy of the combination that pleased me. It was subdued throughout, and yet there was a richness of coloring hinted at in the pale tints that was more satisfactory than more vivid colors would have been. It was the harmony of tints, perhaps, which made it so pleasing.

EBEN E. REXFORD, *Shiocton, Wis.*

SPECIMEN GERANIUMS.

The uses to which the Geranium family may be put in a decorative way are, I think, not out-numbered by the ways in which the Date or Cocoa-nut Palm is made to serve the Arab or South Sea Islander. Their habits of dwarf, medium or strong growth; their green, zonal, golden, silver, bronze and tricolor foliage, together with the climbing habit of the Ivy and hybrid Ivy kinds, leave little that can be reasonably expected of one genus of plants; while the coloring of their flowers, from almost purple to pale pink, and from scarlet to white, with all possible shades between these extremes, with salmon and almost orange besides, gives a chromatic range attempted by only a very few of Flora's kingdom.

The readiness with which, by pruning and training, the plants may be grown in different forms is of great advantage as adding much to their usefulness for decorative purposes.

It will be in order to say that I have used the expression "Geranium family" in a popular way, as all the plants of the Zonale, Ivy and Hybrid Ivy classes, together with those commonly called Lady Washington Geraniums, are, in fact, not Geraniums at all, botanically, but Pelargoniums. But, as in the catalogues, they go for Geraniums, and will be so called as long as they are grown, we will use that name here, and it is not their use for bedding that I wish to speak of now, but their value in the form of specimen and half-specimen plants.

To commence with, it would be a good time to strike cuttings now, or early in September, in the open ground, making the earth a little sandy, if not naturally so, and shading from the hottest mid-day sunshine. When well rooted, pot in two-and-a-half-inch pots, and, if possible, place in a cold-frame, water well, and plunge in saw-dust, or spent tan bark, or hops, or manure, none of which should be at all fresh so as to generate heat, but simply to hold a moist atmosphere about the plants. Manure, if partially decomposed, or wholly so if possible, I have proved to be the best plunging material, as without doubt the slight exhalations from it are of great benefit to the foliage, besides acting gently and continuously through the porous sides of the

pots, if clean, as they should be. The window gardener, who only grows three or four or half-a-dozen Geraniums, with no use for a cold-frame, will find that a trench dug out and filled with the plunging material, or a soap box filled with it, will answer almost or quite as well, as either of these can be kept shaded from the hottest of the sunshine during the middle hours of the day until the plants have taken root-hold. In two or three weeks the plants will require a shift into three-and-a-half or four-inch pots, using soil composed of either good garden earth made light, if necessary, by an admixture of sand; or, if obtainable, decayed sods. To either of these add decayed hops or rotten leaves, and about a fifth or sixth part of old manure, either cow or horse manure. Geraniums are not so particular as Roses, and will do well with the latter if the former is not procurable. This compost will do for them for all succeeding shiftings. It is quite likely that usually a final shift for the season into five-inch pots will be sufficient to keep the plants in proper condition through the winter if kept moderately warm and frequently turned around in a good light window, or better still, a greenhouse or conservatory. In either case their pots should be filled with roots by the middle of November, and unless in good hands they will do better in four than in five-inch pots. If in a sunny greenhouse, they may have a shift into the the next sized pot in March, but for the majority of window gardeners April would be better, using the soil as before, and first loosening the outside of the ball of earth a little so as at the same time to disengage the matted roots and get rid of a little of the old stale soil after the winter's rest. As the season advances continue the shifting. Frequent shiftings give a little fresh, sweet soil at a time, and this is the surest road to success with almost any plant, though there are, of course, exceptions. The repotting may be discontinued at the six, eight or ten-inch shift, or may be continued longer at the discretion of the grower, according to accommodations or the use to which the plant is to be put. They should be, as soon as safe in spring, plunged out in trench, large box or cold-

frame, in the material most convenient—sand, ashes or earth, if neither of the others are at command—which not only lessens labor, but keeps a much more congenial atmosphere about the plants and prevents the washing away of the nutriment in the soil by too frequent waterings. Examine the pots from time to time as to their drainage.

Worms are apt to be troublesome, but a layer of cindery coal-ashes is a good thing under the plunging material, and prevents their working somewhat, or the pot may be placed on a piece of slate or smooth stone.

When it is decided to repot no longer, and the pots are filling with roots, use weak manure water, like weak tea, at all waterings. Use always clean pots, and with each successive shift use more broken pots or broken charcoal for drainage. For the first potting, in two-and-a-half-inch pots, none will be necessary; but for the four-inch pots, in the fall of the year, one piece over the hole will be well, and for five-inch a half inch of broken crocks or charcoal will be good. For the second season, at repotting, drain the pots well and watering will be a far easier matter to attend to. Even then worms may stop the workings of the drainage, and must be looked after. Fresh lime slaked in a little water and then stirred up in a pail or tub with more water and allowed to settle, makes a solution that may be used whenever worms commence to work in pots.

All the single and double varieties of bedding Geraniums and Lady Washingtons may be grown into specimen by the above method.

As to the training, two or more sticks

may be crossed over the top of the pot, like the spokes of a wheel, and projecting beyond the edge of the pot to support a hoop; to this frame-work the branches may be tied down. This forms a foundation for a plant suitable especially for summer decoration of piazzas, and may be used on six-inch pots and upwards.

As a rule, plants should have the point of the shoot pinched out at the first potting, and all subsequent growths pinched out at the third or fourth leaf. This will ensure good bushy plants, and must be vigorously carried out if the best plants are desired. If pyramids are wished, the lower branches can be tied to short stakes and the center shoot allowed to grow upright, occasionally nipping out the top to get side branches as the plant increases in height. The bush form is suitable for all sizes, and is the most natural. The pyramidal form is also very handsome and useful. The flat wheel, or umbrella-shape, may also be used with a plant first grown to any desired height as a single stem, thus forming a sort of table or umbrella shape. But the bush or pyramid is the most natural and useful generally. The flat form, however, if made close down to the pot, is not so stiff as might be supposed, as the branches soon sprout out and produce a low mound-shaped plant, well calculated to show off the beauty of the Zonale Geranium especially. For Lady Washington varieties the bush form is better. The Ivy kinds may be grown by the above directions, but require repotting less frequently, and to be supported by stakes or trained on a balloon, fan, or any desired form.

JAMES BISHOP.

THE RADISH.

That the Radish is a plant cultivated for its root is the general supposition, but a scientific botanist will tell you that what we use is really the lower part of the stem with its long tap-root. These parts become fleshy by the storing up of food for use in starting a new plant the next season; but the amount, as well as the shape and color of the parts storing the food, can be greatly varied by the soil and manner in which it is cultivated.

The name, Radish, probably has the

same derivation as our words ruddy and red, which appear to have sprung from a Sanskrit word, meaning blood. The scientific name, *Raphanus*, is directly from two Greek words, meaning quickly and to appear, and refers to the rapidity with which the plant starts from the seed.

We have here two well recognized species, *Raphanus Raphanistrum*, the Wild Radish, and *Raphanus sativus*, the garden Radish. All our different cultivated Radishes being varieties produced

from *R. sativus*. Many botanists suppose *R. sativus* to be simply a well established form of *R. Raphanistrum*. There are several features by which the two are distinguished. The seed-pod of *R. sativus* is continuous, forming one cell, but that of *R. Raphanistrum* is jointed, forming several cells. Reliable observers, however, have noticed that the pods of *R. sativus* sometimes become jointed, forming two or more cells, especially if the seed be sown and allowed to grow without cultivation. The flowers of *R. sativus* are white or purple, and those of *R. Raphanistrum* are yellow, but the latter turn whitish or purple. The fleshy root of the garden species also distinguishes it from the wild, which has a slim root; but the gardener-in-chief of the Museum of Natural History, in Paris, produced in four generations a slim root, like that of *R. Raphanistrum*, from a fleshy one.

One great objection to this theory

is that *R. Raphanistrum* is a European plant not found in Asia. How, then, could the Chinese and Japanese have obtained from it *R. sativus*, which they cultivated centuries ago? There is no doubt that *R. sativus* originated in the temperate regions of the Old World, and it has been generally supposed that it came from China, but the researches of DECANDOLLE, the great French botanist, show that this species is found native in Western Asia and Southern Europe, but not in Eastern Asia, and that probably it originated in Asia Minor, between Palestine and the Caucasus Mountains, and from there spread both east and west. The common name of the plant in different countries support this hypothesis. The cultivation of the Radish is undoubtedly very ancient. HERODOTUS tells us that it was known by the old Egyptians, and some figures on some of their temples appear to represent the Radish.

A. A. B.

PERFUME OF CALIFORNIA FLOWERS.

I have a great liking for old magazines, and "bound volumes" are my especial delight. I always look with pleasure at the neat row of books standing on a shelf that is dedicated to VICK'S MAGAZINE. This afternoon, while turning over last year's volume, and reading snatches here and there, I came upon an article in the March number, which I remembered instantly by reason of certain statements made by the writer that I know to be incorrect. I intended calling attention to the matter without delay, but other interests forced it to the background, and it was forgotten. A brief reference to it was made in the MAGAZINE several months since, and at this late day I wish to add my testimony.

If the writer of "Winter Flowers about San Francisco Bay" had restricted her statements solely to that locality, I should not have had the slightest criticism to offer, for, though fairly conversant with the region, I have not paid sufficient attention to the flowers thereabouts to warrant any direct contradiction of statements made by one who is apparently familiar with the vicinity. But when she speaks of "all the gardens of California," that includes my beloved southern por-

tion of the State, where I have lived among the flowers nearly eleven years.

She writes: "This lack of perfume in all the gardens of California is very marked, an effect, no doubt, of the dryness of the air." I wish she could see our flower garden. A stay of five minutes would be more convincing than a dozen learned arguments. It is a common thing for visitors to say, "What is it that smells so sweet?" And then I look about to see whether it is the Tuberoses, Narcissus, Hyacinths, Lilies, Mignonette, Jasmine, Honeysuckle, or whatever happens to be in bloom, according to the season. To the best of my knowledge, the plants that are fragrant in the East are fragrant in Southern California. Several stalks of *Lilium longiflorum* grew near our parlor window, last spring, and the room was filled with perfume whenever the window was opened. The Crab Apple blossoms that shed their milky petals in this western land are just as sweet as those that whitened the trees in my grandfather's garden. It is absurd to say that Honeysuckle must be shaken before its perfume is perceived. Its fragrance is very noticeable, and I frequently discover that it is in bloom by my sense of smell.

rather than sight. As for the fragrance of the Grape blossoms, which she says is wholly unknown here, there is nothing more delightful than to walk or drive through one of the large vineyards in early spring when the Grapes are in blossom. To reach the height of enjoyment one should go when the last rays of sunlight glint on the errant tangle of leaf and tendril that stretches broadly away on either side, over hundreds of acres, while the breeze is so freighted with delicious sweetness that every breath is a fresh delight.

It would not be difficult to name a long list of flowers that give out their perfume as freely in this semi-tropical land as do their more fragile sisters beyond the Rocky Mountains, and in addition might be mentioned many others that are only at home under Southern skies. Prominent among the latter are the Orange blossoms, without which no Southern California garden is complete. They are most plentiful in February and March, but the trees frequently bloom out of season, so that a few flowers can usually be found at any time of year. Last spring a party of Eastern friends reached Alhambra at midnight, having been delayed several hours by an accident on the desert. It was a dark night and as they walked up Garfield Avenue, the main thoroughfare from the station, they were unable to distinguish their surroundings

in this new, strange land. They were plodding along after their guide to the hotel, not knowing whether they were in the midst of Sage-brush and Cactus, or Palms and Olives, when a wave of overwhelming sweetness came over them, and one lady cried, intuitively, "Orange blossoms! M—m!" And the others responded, "Yes, it must be! M—m—m!" And during the rest of that fragrant midnight walk the fatigue of travel was forgotten, and speculation ran rife as to the size and appearance of these wonderful trees, so near to one sense and so far from another.

It is frequently deplored that California wild flowers are destitute of perfume. In many instances this is true, aside from the fresh "woody" breath of the gay blossoms. But the sweeping condemnation of "no perfume," is a libel on some of our loveliest flowers. Take the Azalea, for example. I know a bank where the Azalea grows, overlooking a river that is one of earth's marvels; there the limpid green water glides quietly on, its fury all spent by its matchless plunges down the mountain wall, and there are the buff and white, or pink and white, clusters surmounting the glossy leaves, filling the air with fragrance, and making a vision of loveliness at the foot of the majestic cliffs and thundering cataracts.

ALICE P. ADAMS, *Alhambra, Cal.*

FLORAL DECORATIONS.

In laying floral plans it is well to consider the many and varied uses to which our treasures may be put, not the least of which is that of house decoration. Besides the plants which are to furnish the indispensable cut flowers it is well, therefore, to have on hand a few pot grown ornamental plants to be used as required.

Besides the many times they may be used to good advantage in our homes, there are the many public occasions, especially in towns and villages where there may be no local florists, when a call is sent out for volunteer floral offerings wherewith to decorate pulpit, rostrum or stage. This need must be met by those tasteful, forehanded and generous enough to supply the demand, and to a public spirited person,

conveniently situated, forms a sufficient motive for the cultivation of not only a good variety of cut flowers, but a few specimen plants in the manner mentioned, and who of us, on viewing the scant floral decorations in some village church, say upon Childrens' Day when flowers are an important and attractive feature, but has wished for a few ornamental plants wherewith to supply deficiencies, and thus save the credit of the cause and the occasion.

Ferns, Palms, Dracenas, Coleus, Caladiums, Cannas and Callas are all admirably suited to this purpose; easily grown, beautiful and available at all seasons. Lilies, also, especially *L. lancifolium* and *L. auratum*, are coming into use, and we prophecy, since the admirable article by JAMES BISHOP, in the January number of

our beloved MAGAZINE, will be still more widely used for decorative purposes another season, and if there is any other blooming plant which will appear more stately, chaste and grand in conjunction with Ferns und ornamental-leaved plants, we confess we do not know what it is. Fuchsias, Geraniums and Roses, of course, we shall always have; but let us insist that these be fine, compact, well grown specimens, or relegate them to the background.

Later in the season, a pot of Scarlet Sage will furnish a patch of glowing color not surpassed by any other plant.

Many of our common garden annuals may be potted with ease and used with good effect. A box of Browallia on a bracket, with its cheerful, starry blossoms, trailing in wayward beauty downward, is an ornament not to be despised; boxes or pots of Sweet Alyssum, care being taken to prevent seeding, are always pretty and in demand, for the Alyssum will harmonize with everything and fit almost anywhere; a beautiful plant in itself, it enhances the beauty of all others near it, always imparting an air of sprightliness to its surroundings, like a sprinkling of bright-faced children at a "grown up picnic." As an edging across the front of pulpit or stage, few things are finer, and thus used it forms just the contrast needed in size and color to set off to perfection the more pronounced beauty of gaudier blooms. The Sweet Alyssum is perfectly at home in a hanging basket, admirably suited with a position on a bracket, and, delicately sweet and chaste, is a treasure everywhere.

Nor must the vines be forgotten. Everybody knows how ornamental a well arranged Ivy or Smilax may be; but many have yet to learn the decorative effect of a small hanging basket of Kenilworth Ivy, or an Othonna-filled shell suspended from bracket or chandelier; and even that poor, despised little plant, Ground Ivy, a nuisance and a pest in some quarters, compares well with many of its cherished kindred, if given a similar place. The Madeira Vine is agreeable to anything; grown over a screen it rapidly covers it with its clean shining leaves; it will climb posts and pillars, but does not disdain the support of common twine in time of need; or, failing any of these, it will "reverse positions"

and grow head downwards with all the ease and grace with which it climbed toward the skies. Such a plant is invaluable for decoration; however, it should be used very nearly as grown, as some days are required to put all its glossy leaves in order after a decided change of position. And the little Maurandya, the pet of all. Its delicate tracery of vine and leaf lends itself so readily to any dainty device, it clings so tenaciously to any support given it, that it is a delight to deft fingers to weave it into symbol garland, or airy festoon.

Where no attempt is made to perfect elaborate symbols, crosses, crowns, anchors, and the like, which are usually best left in the hands of professional florists, firmness of effect should be carefully avoided.

To the earnest seeker material may be always had with which to do beautiful work. Nature is lavish in her gifts to us if we will but see and use them; she scatters them in rich profusion over garden and meadow and wood, and flings her choicest treasures broadcast to every breeze. But who can arrange like nature? Go, learn of her, study her ways, imitate her methods; does she crowd a dozen different kinds of blossoms so closely together that, "cheek by jowl" with never a leaf or blade of green between to modify tints or intensify shades, every color seems to quarrel with every other? No; in her arrangements all is light, graceful, airy, no jostling or packing or crowding; but in her wonderful economy she will so dispose the fronds of a Fern or the leaflets of an Arbor Vitæ, that each is integrant, and can hardly be taken away without being missed.

Over a rough, gray, lichened rock, she will fling a veil of Gypsophilas, like the mist for lightness, bend above and about that the statlier form and deeper green of Bracken or Maidenhair, and if still above that, a Columbine swings its honied cells to the breeze, or a wild Ivy or Grape flings a few wayward branches or tendrily vines to wave above or encircle the whole, before climbing the overshadowing tree to survey the effect, she but sets an example of artistic arrangement which we would do well to imitate, but may never hope to excel.

DART FAIRTHORNE.

FOREIGN NOTES.

EARLY-FLOWERING CLEMATIS.

When looking through Mr. CHARLES NOBLE'S nursery at Sunningdale a few days ago, I was much struck with some new Clematises of the patens section raised at the nursery and in course of distribution. They were George Elliot, blue-violet, large, well formed, eight-petalled flowers of a charming hue of color, and exquisitely scented, like Violets. We do not appear to possess many fragrant Clematises, but this is one of them. Then there is Lady Constance Kennedy, a charming pure white variety. On young plants the flowers are single, but as the plants increase in size they become semi-double and double, and it is very free indeed. This makes an excellent addition to our pure white early-flowering Clematises. Lord Beaconsfield has light lavender-gray flowers of good form and large size. Mr. Gladstone is of light azure blue-gray, a very pretty shade, large in size, and of fine form. The last is Daniel Deronda, mauve-violet, flushed with red, and with a slight flame of white on each petal. This variety sometimes comes semi-double. These Clematises are propagated very largely and with great rapidity. They are worked—*i. e.*, grafted—on roots of Clematis Vitalba. Grafting is done about the middle of March, and the graft is tied round with a bit of raffia, which rots, and therefore saves the trouble of cutting away. They are then plunged in bottom heat in frames within a propagating house, and as soon as they make a shoot of six inches or eight inches in length, they are placed in a cooler temperature, then shifted into four and one-half inch pots as they require it; and when sufficiently hardened off, they are plunged in beds in the open ground for sale in autumn. The wood made during the summer ripens off and produces flowers in May and June following; therefore, it must not on any account be cut away, as in the case of C. Jackmanni and others of that type. Some of these early-flowering Clematises, if planted out among varieties of the C. Jackmanni type, that bloom

through the summer and autumn, by reason of their flowering some time before the latter, give a desirable succession of bloom throughout the summer.

R. D., in *The Garden*.

INDIAN PINKS.

It would be interesting to know the exact origin of that section of double Indian Pink known as *Dianthus imperialis*. Either it is a selection from the ordinary double Indian Pink, *D. Chinensis*, or it is the result of a cross between this and one of the mule Pinks, if that is possible. *D. imperialis* grows to about the height of a foot, and has bright crimson compact double flowers; a variety named *atrosanguineus* has rich vermilion flowers, very bright and effective; *imperialis pictus* has white flowers with slight rosy marking; *albus* is pure white. Another closely allied to this group is called *D. Dunnetti splendens grandiflora*, also double, and of a brilliant red color. All here may be said to be hardy biennials, flowering the same year if sown early enough, and if the plants have grown into size and come through the winter well they are objects of great beauty the second year. The ordinary *D. Chinensis* (from which, perhaps, the foregoing are only choice selections), have a great variety, both double and single, but they are not so often met with in gardens as they deserve to be. Any one who grows them can come and cut again, and by no means exhaust the capacities for blooming the plants appear to possess. *D. Heddewigii*, it is well known, is a fine selection from the foregoing, and took the public by storm when it was first distributed some thirty years ago; the first selection was the fringed-edged *lacinia-tus*, and others followed.

The *Dianthuses* are, as a rule, much too thickly sown, or rather the plants are not sufficiently thinned out, and if the ground be poor, the blossoms are meager and poor, instead of being large, stout, and rich. If only individual plants were allowed to occupy the space too often given to four or five, and they were culti-

vated instead of being neglected, what a reward would follow. If some common flowers, as they are termed, had articulate voice, what a volume of protest against neglect would go up from some gardens.

R. D., in *The Gardeners' Chronicle*.

PURPLE-LEAVED BARBERRY.

In a recent number a correspondent, "T.," calls attention to the merits of the above as one of the most striking for forming purple masses in the spring. He also says truly that the more fully exposed to the sun the more dense and brilliant the coloring. To prevent disappointment with this charming plant, I would add that the poorer the soil and drier the site the deeper the purple of the leaves. So much, in fact, is this variety dependent on site or soil, that it will lose most of its purple coloring by being planted in a rich soil in a shady place. "T." names a companion plant to set off the Purple-leaved Barberry to greater advantage, viz., the golden-leaved *Spiræa opulifolia*. This is good, as is the less common golden-leaved *Syringa*, which matches the Barberry better in height. More effective, however, than either for contrast is the Silver Maple (*Acer Negundo variegata*). The latter also forms grand masses contrasted with the purple Filbert and the broad and darkest-leaved variety of the purple Beach. The latter is a most accommodating plant, and may with a little attention be cut and kept down to any height in the shrubbery desired. When this fact is more generally recognized by landscape gardeners, the purple Beech is likely to be more largely employed as a background for Laburnums, white Lilacs, light or silver Rhododendrons, &c., while for telling masses of purple in the fore or middle rank of shrubberies there are few plants equal to purple Filberts in the spring or summer months.

HORTUS, in *The Garden*.

ROSA RUGOSA.

This Rose, which forms such an attractive feature at the present time, will strike fairly well from cuttings put firmly in a border during the autumn months, but a very good way to increase it is, if an established specimen exists in a position suitable for the operation, to layer

the branches, for those treated in this way during the winter are already throwing up shoots in all directions, and where cut, the stems are now beginning to root. The white variety being as yet much scarcer is sometimes budded, but in this case suckers from the stock are often a nuisance, and it is more satisfactory when struck from cuttings or layers. Seeds take a long time to germinate, which they do very irregularly, but in the case, at least, of the red variety they perpetuate the same kind.

T., in *The Garden*.

VENERABLE PRIEST OF FLORA.

Dr. ASA GRAY, who has been spending several months in England, and on the European Continent, had conferred upon him, in June last, at Cambridge, the degree of Doctor of Science. The Public Orator expressed a hope that Professor GRAY might be permitted to see the completion of that great work of the *Flora of North America*, on which he had been so long engaged, and alluded to him as the *floræ sacerdos venerabilis*, who had reached the seventy-sixth year of his age. "Through all this tract of years wearing the white flower of a blameless life."

At Oxford the Doctor was constituted a D. C. L., and his personal characteristics described as: *Moribus suavissimis veritatisque semper quam famæ propriæ studiosior*.

BOIL YOUR MILK.

It is now decidedly proved that scarlet fever is due to the multiplication within the body of minute plants (micrococci) which are introduced from unhealthy cows. These creatures are, however, killed by boiling the milk. In one case a lodger died after drinking unboiled infected milk, while the landlady, who drank the same milk boiled, experienced no ill effect. By itself this case proves little, but in association with Dr. KLEIN's careful experiments and observations it goes to prove the truth of the proposition.

Gardeners' Chronicle.

HOLLAND BULBS.

Dutch Bulbs, and especially Hyacinths, have matured later the present season than usual, on account of the cold, late spring in Holland. They are, however, of fine quality.



THE ROYAL JUBILEE BOUQUET.

THE JUBILEE BOUQUET.

We present to our readers an illustration of the Jubilee Bouquet used for the decoration of a corridor in Buckingham Palace on the occasion of the royal Jubilee festivities, in June last. This engraving is reduced from one as it appeared originally in the *Gardeners' Chronicle*. All the flowers were Orchids; the foundation, consisting of wire, moss and ferns, was about five feet in height and six feet in diameter. The crown, which surmounted the whole, and which was composed

mainly of *Oncidium Marshallleanum* and *Dendrobium suavisimum*, stood on a cushion of flowers of *Cattleya Warneri* and *C. gigas*. On the side of the bouquet the letters "V. R. I." were displayed in flowers of the orange scarlet *Epidendrum Vitellinum majus*, and a cross of the same brilliant species surmounted the crown. The bouquet was in an elegant vase, and stood near the entrance to the Queen's boudoir. It was made by one of the most skillful florists in England, and was greatly admired.

PLEASANT GOSSIP.

PASQUE FLOWER.

After an absence from home I interested myself, as I always do, in the "VICK'S" awaiting me.

In the June number is an article upon the Pasque Flower, with an illustration which is very incorrect, unless I mistake the species. If I am wrong, I am very anxious to be corrected. Our flowers stand more erect, so much so as to have received the name



ANEMONE PATENS, VAR. NUTTALLIANA.

"Gopher Blows" in many districts. The involucre is always near the flower; the flowers have a much darker shade outside. The leaves very seldom appear at the time of blooming, even in their furry state. At their full development they very much resemble in appearance some species of perennial Larkspur.

I have not a suitable specimen to send, but hope the little pen sketches, I take the liberty to enclose, will enable you to tell if it be *Anemone pulsatilla*. They are correct as to the habits of our flowers,



ANEMONE PATENS, VAR. NUTTALLIANA,
SHOWING FOLIAGE AND SEED HEADS.

though the workmanship may be faulty. I could paint them much more readily.

This flower is called "Badger" very generally throughout Northwest Wisconsin, and rejoices in many other local names. Some, who dry, powder and use as snuff, for headache, name it "Headache Weed."

Some one asked, several months ago, about *Verbenas* which had been kept for winter blooming.

Put out early, layering down the long stalks, too apt by spring to be leafless, and July will find a large bed of solid color. It is the only sure way, in my soil that I can receive returns from *Verbena* planting.

I wish articles describing desirable plants would always be accompanied by the name of the locality. Especially would I like to know, when I read of some beautiful shrub, if I may hope to possess it.

If you knew how many questions and remarks every number of the *MAGAZINE* inspires, I should be pardoned this.

F. F. D., *Durand, Wis.*

The illustration referred to above, which appeared in the June number, was *Anemone pulsatilla*, the Pasque Flower of Europe, and so named. The native plant, described in connection with the illustration at that time, and which is now truthfully illustrated here, thanks to our correspondent, is what is called Pasque Flower often in this country. It is *NUTTALL'S* variety of *Anemone patens*.

COLEUS.

In the August number of the *MAGAZINE* Mrs. E. C. C. S., of Readville, Mass., wishes instruction for the care of *Coleus* plants. As it is now too late to grow "stock" for garden decoration, I presume the information is needed for winter treatment. My practice is to grow fine healthy plants this summer, and in August and September, before frost, take cuttings for my winter stock. This may be done without the aid of glass or any protection, if some shade and moisture is secured. Under trees or dense shrubbery, the temperature is about right to root them.

Mellow the soil in the place intended for them, cover this with some two or three inches of sharp, clean sand, level it off and water well. Never take off more cuttings at one time than can be attended to immediately, as they wilt if cut long, and never recover from it. Cut them with three or four pairs of leaves, leaving the lower pair attached, but cutting close to them, insert in the sand only enough to secure them in position, placing them in rows, say an inch or more apart each way. When fully rooted, which should be in a few days, either pot them in small pots or transplant to another bed, in either case observing to give them full

morning sun, but shading the first day or more after disturbance. If inclined to grow tall or spindling, pinch the tips; this checks elongation and furnishes strength to the incipient buds at the axils of the lower leaves and causes them to break and form branches. When these have made their third or fourth leaf, pinch as before; this will form beautiful shaped plants, very bushy and desirable. They should be regularly watered and well protected from chill or frost.

If grown in window garden, they will need the sunniest and warmest shelf and extra protection at night. After the holidays, take cuttings, observing the same rules, &c., substituting a shallow box for the garden bed, discarding the old plants altogether, as at this season in room-culture, especially, they will have lost nearly all their foliage, except the tips of each branch. But these will make splendid new plants. In the greenhouse the work is about the same, except that it is more sure, bottom heat being available, with full sunshine.

They are so beautiful, and lighten up all their surroundings, they are well worth learning how to treat, how to secure stock for spring bedding, &c. Here, my experience is, they do better with a southeast position, where they will get full morning sun and be somewhat sheltered in the afternoon. They retain their exquisite tints and blendings of color without being burned or faded.

I have grown several new varieties from seed, but they sport too much to make this way desirable, and as cuttings root very rapidly, either in damp sand or clear water, the tedious and uncertain seedlings are seldom attempted. IONE.

SOURCE OF SCARLET FEVER.

The *Sanitarian* says it is only necessary to refer to a series of papers in one of its former volumes, by JOHN C. PETERS, M. D., of New York, to learn that this fact was well recognized more than three centuries ago. "Dr. KLEIN's recent discovery of the morphological identity of a micrococcus found in the blood of human scarlet fever patients with that obtained and cultivated from certain cows affected with a similar disease, is, therefore, confirmatory only of a long since well established truth. Measles, diphtheria, and several other diseases hold the same relation."

POTATO ONIONS.

I see in your number for August, 1887, page 241, that Mrs. J. A. C., Frederica, Delaware., asks for some information concerning the planting, culture, &c., of the Potato Onion. In Delaware, where the climate is similar to that of this section of the country, I should think the same proceedings would do, viz.: Prepare the ground the same as for any Onion sets, and plant in rows eighteen to twenty-four inches apart, putting the sets twelve to fourteen inches apart in the rows. From the first to the fifteenth of September is the proper time to plant. They are protected in the winter by a good top-dressing of short manure. In the spring, as soon as the ground can be worked with a hoe, this same top-dressing should be worked into the soil well, and the ground worked over as often as possible, and for this reason, that there being so many bulbs together, unless the ground is kept loose and in fine condition, they will not grow to any size. As many as seven or eight Onions will come from one set. They come early in the spring, and are mild in flavor.

C. A. E., *Washington, D. C.*

PUMPKINS AND CUCUMBERS.

Dr. HALSTED, of the Iowa Agricultural College, claims, as the result of experiments, that seed of the Squash and Melon tribes will almost invariably fail to grow if thrust vertically into the soil, as once was a common method, especially with Pumpkin seeds, and is yet practiced by many. "It would be better to sow the seeds upon the soil, and leave them without a covering of earth, than to set them endwise. Flat surface seeds, it was found, would throw their coats without failure provided the earth was kept sufficiently moist. In field and garden practice there is the danger of the seeds left upon the surface being destroyed by birds, etc. The best way is to plant them flatwise two-thirds of an inch below the surface, or somewhat deeper, if the soil is dry. Much depends upon the amount of moisture present. Instead of preparing the hill for Squashes, and sticking the seeds endwise into the mound or hill, it is far better to make leveled places, sow the seeds and cover them with an inch or so of soil."

TULIPS.

At a meeting of the London Horticultural Club, in June last, a paper on Tulips was read by Mr. POLMAN MOOY, of Haarlem, Holland, which contains so much of value that we transfer the greater part of it to our pages, believing it will be found both entertaining and instructive. In our last volume, page 228, &c., we quoted from a paper on Hyacinths by the same authority, which was read on a similar occasion last year.

The Tulip derives its name from the Persian word, "Thoulybau," turban, the eastern head dress much worn in Turkey, Persia, and other eastern countries. In Turkey the Tulip is named "Tubilent," also because of its resemblance in shape to the head dress there in use.

According to an ancient writer on this subject, DIOSCORIDES, the name of the Tulip must have been *Satyrion triphyllum*, and also has gone by the name of Narciss of Pliny. In Turkey the early sorts go by the name of Caffa Lalé, and the late blooming sorts are named Cavala Lalé, after the names of the localities where they mostly grow.

The Tulip is a bulbous plant, throwing up a single stem of from four to thirty-six inches, forming its single flower at the very top, consisting of six petals forming a cup-shaped flower, with its functions for fructification by seed in the center of this cup; they are divided into various classes according to their time of blooming and the different characters and nature of coloring of each individual class when in bloom. From a book published in the Dutch language, printed in Antwerp in the year 1644, by REMBERTUS DODONÆUS, a botanist at that time, it is mentioned that the Tulip in former ages was known by the name of Pythion, and at that time the wild Tulip was eaten and was used for thickening the milk. THEOPHRASTUS, another author of past ages, declares the Tulip to be a very good food, while two other authors, HESPECHIUS, together with GESNER, in their botanical works, mention that the old name has been *Satyrion Erythronium*, producing only a red flower, which was considered at that time a very good eatable bulb.

The learned gentleman, GESNER, called the LINNÆUS of the sixteenth century, met with the first Tulip at Augsburg (Germany), in a garden of which the Councillor JOHAN HEINRICH HERWART was the proprietor.

It further appears that the first Tulips were imported into Holland in the year 1522 by AUGERIUS GISLENIUS, of Busbecq, born at Commines, in French Flanders, and died at St. Germain, near Rouen, on October 28th, 1592, which gentleman had been sent out by the Emperor FREDERICK THE FIRST to SOLIMAN THE SECOND to Constantinople. This gentleman having traveled through a good portion of Asia, brought the Tulip into Holland, having collected it in Persia.

The first Tulip was seen in bloom in Amsterdam at an apothecary's there of WALICH KIENWERTZ, where it was greatly admired by the public, but CAROLUS CLUSIUS, a botanist at Utrecht, was the first who occupied himself with growing and distributing Tulips. This gentleman distributed Tulips all over Holland, and created a taste for them among the public, which led at the time to the neglect of all other flowers. Already at that time Tulips

were sold at pretty high prices, although not equal to the prices in the speculative days later on. At the above named date Tulips were known only in two wild growing sorts, distinguished by the names of Large and Small sort, the latter being only in one color—viz., yellow, and this sort is probably the original sort from which our many early Tulip varieties have sprung.

The classes in which Tulips are divided are named as follows:

- a. The Single Early Tulips.
- b. The Double Early and Double Late Tulips.
- c. The Garden or Single Late Tulips (fancy Tulips), Tulips d' Amateurs.
- d. The Parrot Tulips.
- e. The Botanical Tulips.

The early Tulips are again divided according to their time of flowering, of which the single early Duc Van Thol Tulips (*Tulipa suaveolens*) in various colors are the very earliest, and are therefore most esteemed for early forcing in pots or vases for indoor decorations, when with proper treatment these can be had in bloom by Christmas or even earlier. They can be had in the following different colors, viz., brilliant scarlet, red with golden yellow border, vermilion, crimson, red laced with gold, pure white, yellow, rose, purple, rose spotted, orange and violet. When the above named Duc Van Thols are planted in pots or vases, they prove a very beautiful and a very early in-door decoration at a season when blooming plants are generally very scarce indeed.

The somewhat later blooming Single Early Tulips comprise at the present date numerous colors, from pure white up to the most intense scarlet, and they are highly ornamental if planted in beds in the autumn, when early in spring they make a most pleasing and effective show. Their beauty for this purpose has become so highly appreciated, and has become so much in favor of the general public throughout the civilized world, that thousands (even millions) of bulbs are now sent all over the world to satisfy the increasing taste for these garden decorations in early spring. These early Tulips are the more valuable and appreciated because they bloom very early in spring, almost immediately after the severity of the winter has left us, being a time too early for planting out the summer plants, and thus filling up the period between winter and summer planting, which, without them, would have to be left without any floral garden decoration. At the time when the Tulips have finished blooming and can be taken up is just the proper time when summer plants should be inserted.

The Tulips for garden decoration should be planted in October or November, and should be somewhat protected against the severity of winter with some covering material such as straw, reeds, or leaves, which, however, should be removed immediately when milder weather sets in, as otherwise the Tulips get drawn up, and are consequently weakened.

BLOOMING IN POTS.

The Single early Tulips are much used for forcing in pots. By planting three to four bulbs in a moderate-sized pot they can do very well in a room, when their gradual development during winter is a daily pleasure for an admirer of Nature to notice. These Tulip roots can also be used on water like a Hyacinth, in which style they look very showy among other flowers or plants. Of the class of Single Early Tulips there are numerous varieties in almost all

shades of colors, and although fifty years ago many varieties existed, during the last fifty years the most striking and beautiful sorts, now so much in esteem, have been raised and brought into use, and are certainly very great improvements upon the older varieties.

PLANTING IN BEDS.

The Double Early Tulips now in cultivation are not so numerous in variety as the Single, but some of them are very beautiful and highly attractive by the large size of their rose-shaped flowers and also by their fine combination of colors. Some of these Double Tulips are most suitable for planting out in beds owing to their short-growing habit and the very sharp and well distinguished colors.

The following early varieties are dwarf-growing, and together grow very uniform, all of the same height, and coming into bloom at the same time. These are: *Rose Blanche*, pure white; *La Candeur*, white; *Agnes*, brilliant scarlet; *Rubra maxima*, deep red; *Rex Rubrorum*, dark red; *Queen Victoria*, purplish red; *Murillo*, rose; *Tournesol*, red and yellow; *Lac Van Haarlem*, pure violet, and many more.

When planted in beds all sorts of figures in distinct colors can be made of them after certain designs.

Of the tall-growing "double late" sorts, some are extremely beautiful, among which I may mention the *Mariage de ma Fille*, red, striped with white; *La Belle Alliance*, white, striped with violet; *Yellow Rose*, pure yellow, and so many more which, when planted in front of or between shrubberies, produce a very fine effect.

LATE TULIPS.

The Late Tulips (also called fancy Tulips—*Tulipes d'Amateurs*) is the class which has created the greatest and most important sensation during the period that Tulips have been introduced into the floricultural world, and it is this class which has had ever since its introduction most of the ambition and love of florists and fanciers. This class has received for more than two hundred years all the care and attention that could possibly be bestowed upon a plant, not only by the Dutch florists, but by every skilled gardener throughout the civilized world.

The *Tulipa Gesneriana*, brilliant scarlet with black center, is probably the Mother Tulip from which all the many hundreds of different varieties have originated in almost every shade of color from pure white to the darkest crimson. This is an importation from Asia Minor, the Caucasus, Calabria, and Central Italy. CONRAD GESNER, a Swiss naturalist, in whose honor it was named, mentioned this Tulip first, and published a description of the same, accompanied by a drawing, in 1559. This gentleman obtained it first in a garden at Augsburg, where it had been grown from seed brought there from Constantinople. It was first flowered in England by Mr. JAMES GARRES, an apothecary, in 1577. Of this class of single late Tulips there is almost an endless variety. I must also mention that the amateurs and Tulip fanciers in England have also contributed largely during the last eighty years to the very great improvements among the fancy Tulips. Notwithstanding the mania of former days (of which I wish to speak later on) has safely passed over, I at present keep over eighteen hundred varieties of this splendid flower. When I was a young man, nineteen to twenty years old, I was apprenticed with the late HENRY GROOM, at that time a nurseryman in Walworth, which gentleman used to keep a most beautiful collection of Tu-

lips of English raising, of which he was in the habit of opening a private exhibition every year, to which the nobility and gentry residing in or about London were invited by private cards, and which many thousands of ladies and gentlemen came to see and admire.

The character of a good Tulip consists in the novelty of the sort and in its peculiar marking of colors, either feathered or blotched, with a pureness at its interior base. The ground color should be clear and distinct, whether white or yellow. The petals should be of a firm substance, not withering soon by the action of the sun, but keeping their true coloring unwithered for at least ten to fourteen days. These late or fancy Tulips which have been so much admired by many generations, have been grown from seed by thousands, and the result of this has been the acquisition of many superb varieties, at first in Holland and Belgium and later on also in England. There is a singularity in Tulips which belongs to no other flower, and which, as experience shows, affords an extraordinary inducement to lovers of flowers for their cultivation and improvement. The seedlings generally when they first bloom produce flowers without any stripes or markings, but with a yellow base, the upright portion of the petals being self-colored brown, red, purple, scarlet, or rose. In this state, when they have been grown for years without variation, they are called breeders or mother Tulips. These are planted every year until they break into stripes, when if the markings are fine or different from any one known they receive names, and are taken up in the existing collections. It is often so many years before they break, and the multiplication in the breeder state is so rapid, that the border soon becomes filled with this self-colored variety. Each Tulip grower who has broken a seedling claims, and has a perfect right, to give it a name; but some confusion is naturally brought on, because of the fact that different names have been given to those that have broken almost exactly alike. In a bed of a hundred seedlings it is not probable that any two will be very nearly alike in their markings, which uncertainty adds greatly to the charms of Tulip cultivation. The hope of obtaining something new in the markings and pencilling is a sufficient stimulant for the enthusiast to persevere in his labor of love until he has found one quite worthy of a name. Another singular feature in the Tulip is that after it breaks it ever remains the same, and never returns to its self-color again.

The show or fancy Tulips are divided into three classes:

1st. *Byblœmen* or Violets, such as have a white ground variegated with purple or violet, the edges well feathered, the petals erect, and the whole forming a perfect cup.

2d. *Bizarres*, having a yellow ground variegated with rose, scarlet, purple, or violet.

3d. *Roses*, with white ground color variegated with rosy red, pink, or soft rose.

PROPERTIES OF A GOOD TULIP FLOWER.

The properties of a good Tulip flower are as follows:

1st. The cup should form, when quite expanded, from half to a third of a round ball. To do this the petals must be six in number, broad at the ends, smooth at the edges, and the divisions between the petals must scarcely show an indenture.

2d. The three inner petals should set closely to the three outer ones, and the whole should be broad enough to allow of the fullest expansion without

quartering, as it is called, or exhibiting any vacancy between the petals.

3d. The petals should be thick, smooth and stiff, and keep their form well.

4th. The ground color should be clear and distinct, whether white or yellow. The least stain, even at the lower end of the petals, renders a Tulip of less value.

5th. Whatever be the disposition of colors or marks upon a Tulip, all the six petals should be marked alike, and be therefore perfectly uniform.

6th. The feathered flowers should have an even close feathering all around, and whether narrow or wide, light or heavy, should reach far enough round the petals to form, when expanded, an unbroken edging.

7th. If the flower has any marking besides the feathering at the edge it should be a bold mark down to the center, but not reaching the bottom of the cup. This mark must be similar in all the six petals.

8th. Flowers not feathered, and with the flame only, must have no marks on the edge of the flowers. None of the colors must break to the edge. The color may be disposed in any form so that it be perfectly uniform in all the petals, and does not go too near the bottom.

9th. The color, whatever it may be, must be dense and decided, whether it be delicate and light or bright and dark; it must be distinct in its outline and not shaded or flushed.

10th. The height should be eighteen to thirty-six inches. The former is right for the outside row in a bed, and the latter is right for the highest row.

11th. The purity of the whole and the brightness of the yellow should be permanent—that is to say, should stand until the petals actually fall.

THE TULIP MANIA.

After I have pointed out the pleasure and ambition which the culture and improvement of Tulips has given to so many admirers of nature through many generations, I can hardly overlook the wonderful excitement of which this at first quiet and innocent pleasure and trade was the precursor in past ages, and I presume that some information about this extravagant trade, or rather foolish speculation, may prove agreeable and interesting to some of the members. I have endeavored to procure every possible information on this subject, for which I have taken the trouble of searching through all the old libraries, as well in the old documents of the city of Haarlem as in those of private property, but I am sorry to say that my gatherings have not been so successful as I had expected, while it appears that very little in detail has been noted down of these remarkable times.

The best information on this subject which I have been able to find is in a little book containing three different dialogues on Flora's rise and decline, printed and published by JOHANNES MARSHOORN, printer, residing at that time at Marckt, in Haarlem, in 1784. It appears that what has been published after that date on this subject has all been obtained from this book, which seems to have been the only source for information in this respect. The city of Haarlem was at the time I speak of very famous for the manufacture of handweaving of various goods, which were mostly intended for export to India and other foreign countries, while the weaving by steam power, now in use, was at that time quite unknown.

It appears that these weavers, who were well-to-do citizens, during their holidays and Sundays, and all recreation days, amused themselves and found

great pleasure by growing flowers, for which purpose they possessed small gardens just outside the city, with little summer-houses for shelter in rainy weather and to store away their garden tools.

The very spot on which my offices and warehouses in Haarlem now stand, and the nursery in the back of it, used to be the site of thirty of these gardens, where on a holiday these people visited each other, played at marbles, and took a great delight in the growing of flowers to their taste. Among these quiet and honorable people Tulip growing appears to have at first originated, and has gone on for several years without being much noticed; but the seedlings of Tulips, and the breaking of flowers into varieties of fine color, gave an interesting stimulus to this fancy, and brought on a little trade among them of novelties. By the introduction now and then of more wealthy citizens among these fanciers, this trade became more and more popular, until in the year 1633, when the trade in Tulips became so extravagant that it ruined thousands of people, and which was at last so very much taken up by all classes in society that at the end of the fourth year government found it expedient to interfere.

As to the great cause of this famous trade and wild speculation which sprang up in Holland in the year 1634 there is no publication which gives a detailed answer, but it is more than probable that the great impulse to this extravagance came from Paris, where, in the year 1632, a fashion amongst ladies sprang up among the nobility and wealthy classes of society to wear Tulip flowers of the most beautiful colors on the left side of the bosom. Tulips were at that time rather novel and scarce, and consequently very costly, which may have led to it that they were used like diamonds and other precious stones, so as to satisfy the wealthy class of people in their love for show or pomp, which has at all times been found among human society.

This fashion soon exhausting the stock of Tulips in hand sent up their value to very high prices, when tradesmen and speculators, finding that in Haarlem the Tulip fanciers existed, endeavored to supply their wants for this costly fashion among these growers, who thereby received a great stimulant to the trade, which soon degenerated into extravagant speculation; and as fashions, particularly of such a costly nature, never last very long, it is quite natural that two years afterwards, when the fashion had changed and Tulip flowers were no more wanted, the Tulip trade fell to the ground.

From the publication above named I find a list of the names of the Tulips at that time known among the trade, consisting of one hundred and twenty-one different varieties (although I certainly believe that a good many more sorts were known at that time, although not in this list). The greater portion of the sorts in this list are not in cultivation at present; but I however, find among them six sorts still in my collection at the present day—viz., Bruid van Haarlem, Geeltrood van Leijen (Red and Yellow of Leiden), Generalissimo, Lac van Rhyn, Nons (wit), Somerschoon (Summer Beauty).

It appears that at the time when the greatest speculation was going on the Tulips were sold by weight, and they were handed over at very high prices, especially considering the so much higher value of money in those times.

There was in those days a committee nominated out of the florists, who assembled almost every day, and all the Tulip roots intended for sale were brought to this committee, who took the bulbs, weighed them carefully, and sold them to the visitors of the sale, of which at that time there were always a good num-

ber ready to buy according to their fancy, and at all fancy prices. The Tulips were there sold per root, but also at a certain price per Ace weight (the smallest medicinal weight, 9728 Acen being equal to one pound).

In these times almost every man in all positions of life, either noblemen or tradesmen of the lowest class in society, even coachmen, letter carriers, carpenters, and weavers were then more or less actively engaged in the Tulip trade, stimulated by the heavy sums of money the bulbs so often fetched, and the apparent large profits which they brought to the lucky speculators.

One bulb of *Semper Augustus* was sold for the sum of £176, with the special condition that the purchaser should not be allowed to sell it again without the written consent of the seller, and for ten Tulip roots in ten different sorts the sum of £1000 was offered, which the proprietor refused to accept, as he considered that to be less than actual value.

Respecting the variety, *Viceroy*, a very curious story is told in one of these ancient books of a Tulip fancier, who was so very anxious to get possession of this Tulip, but not having sufficient money to pay for it in full, he arranged with the seller to give him in exchange for one bulb the undernamed articles, besides a sum of silver money, also two tons of corn, six tons of rice, four fattened bullocks, a dozen sheep, eight fattened pigs, two barrels of wine, four barrels of beer, two barrels of butter, one thousand pounds of cheese, one bed, with various wearing apparel, the whole calculated to represent £210. Another fancier exchanged the freehold property of twelve acres of land for one Tulip root, and at a public sale one morning in Haarlem, £800 for a few, only a few Tulips. A very good dwelling house, now still standing in one of the principal streets of Haarlem, was also exchanged for one Tulip root. An inhabitant of Brussels at the time was proprietor of a small garden there, where the nature of the soil appeared to possess a particular natural power to bring seedling Tulips to break, and thus greatly improve their value. A good many dealers in Tulips sent their seedling breeders there to be planted at a pretty high premium per season.

All sorts of Tulips were sold and re-sold day after day, always at an advanced price, which, I may say, made some people wild in their extravagant desire to gather riches. Several weavers in fairly good circumstances left off working and sold their looms for the purpose of laying out all their money and employing all their time in the trade of Tulips. During the time when the Tulip roots were in a growing state in the grounds, they could, as a matter of course, not be sold by weight, but, however, the same extravagant trade was still kept going by written contract blanks, which the tradesmen carried in their pockets ready made, and only requiring to be filled up and signed. These contracts contained an accurate stipulation of the place where the bulb sold had been planted, and the purchaser had the right to take it up when withered, but could only do so in company of the seller, to avoid fraud, while the gardens where these valuable Tulips were planted were watched day and night. A strange custom with some of these private sales seems to have been adopted—viz., when a Tulip bulb sold during winter was to be taken up in summer, both the seller and the buyer went together to the place where the bulb had been planted, and after the bulb had been taken out of the ground it was placed in a small box, which was carefully sealed, and the box in this state was kept by the seller, while the purchaser was allowed a certain time, probably fixed by contract, to decide

whether he would accept it at the price and pay for it or refuse it, when the transaction could be considered as undone; but the party thus refusing had to pay a certain per centage for wine as a penalty. It appears that several of these private sales had been effected on every curious condition, but what little has been said of them in the way of explanation how it was done, this has been described in such obscure and incomprehensible words that it cannot be considered an explanation at all, and leaves it entirely obscure to posterity.

The most common Tulips, which in former years had been thrown away as being surplus stock and of no value, was then brought to the market of the florists and sold at big prices to the fanciers.

After this trade had gone on for four years a general meeting was held of the florists on February 3, 1637, at which it appears that a change in the market took place, as if suddenly the eyes of the foolish speculators had been opened. Every one of them wanted to sell, but could not find anybody to buy, and from that day speculation fell to the ground, and in its crash brought ruin and sorrow over the whole of florists and Tulip fanciers, which must have been felt severely through all classes of society, doing considerable injury to the trade at large. I may presume that during this extraordinary time many singular occurrences have taken place, of which it might have been interesting for posterity to know the details, but as they appear not to have been noted down by anybody then living, we must content ourselves with what we know of it. Certainly it has been a most extraordinary occurrence, and shows how under a combination of political or domestic circumstances so many people can be brought to ridiculous doings, which at the end must bring ruin and sorrow over their heads.

PARROT TULIPS.

We now come to an altogether distinct class, the so-called "Parrot Tulips," which are well worth our attention. Where they originated we cannot say for certain, but I am of opinion that they originated from a monstrous sport out of the late or fancy Tulips, among which they are occasionally found. Their curious form of flower and the very striking beauty of their showy colors may have made them worth growing in quantities.

They may be ignored by those florists who claim the right to say what is and what is not beautiful, but as I am not bound to observe the laws that regulate the form, shape and perfect markings, I prize this class very highly on account of their singular picturesque appearance, and their large and exceedingly brilliant colors, while it is a fact that the demand for them from all quarters is very considerable indeed, and has been increasing considerably of late.

They are unequaled for groups in mixed borders or conspicuous places in front of shrubs, and they also prove very ornamental if planted in hanging baskets or other hanging ornaments.

The variety in this class is very limited, their colors ranging between deep red and pure yellow; but they are, nevertheless, beautiful and attractive, and more particularly so those of decided colors, such as *Monstre cramoiisi*, *Rubro major*, *Luteo major*, &c.

CULTURE OF THE TULIP.

The best soil for the culture of the Tulip is a rich, rather light, well drained sandy loam. A bed of sufficient size for planting the bulbs should be dug at

least twelve or fourteen inches deep. The Tulips should then be planted four inches apart each way, pressed deep enough to keep them in their places, and covered with mold to the depth of three inches on the sides of the bed, and five inches in the center. This precaution is necessary that water may not stand on the bed during the winter. When the bed is planted and covered it may be left to the weather until the Tulips come up, or about March 1st. A slight protection of litter is then required, as the frost, if severe, has a tendency to check the bloom. Our climate is so variable that it will well repay the cost of covering at night and remove in the morning, in case snow for some time should not prevent this; but if the foliage is left for a long time covered up it has a tendency to draw up, and weaken the plant,

When the flowers appear and they are protected from the sun by a light canvas, the period of bloom may be kept up for three or four weeks. The colors are generally better if not shaded at all, but in that case the bloom, particularly in hot weather, would soon be over. Sometimes a single day's hot sun would completely spoil them. When the flowers begin to fade they should be cut away and removed from the bed. I must, however, here mention yet what I consider a very important item, and which I know is very often overlooked in planting Tulips—viz., never plant Tulips in the same bed, or rather in the very same soil, for two or three consecutive seasons, or if such might be desirable take at least two feet of the old soil out of the bed and replace by fresh ground. If this is not done the Tulips will bloom more poorly every year, and at last not bloom at all. I know that very often this has been the cause of great disappointment to buyers, who blame, although erroneously, the seedsman or the grower who has supplied them.

CHRYSANTHEMUMS.

So much has been written or said about Chrysanthemums and their culture that there is but little new left to say. All love them and many cultivate them in profusion. One lady of our acquaintance has in her collection some thirty kinds, all of the most beautiful, and we marvel much at the improvements made in the last few years over the old sorts. Here, though we ever prize the old time white, with its large, snowy blossoms, in intimate connection with the old yellow and red of our early recollection, we find a whole new sisterhood of many and multiform shape and beauty, each a new surprise.

Our inclinations point decidedly to the white varieties. Here a connoisseur could find among these, rare new sorts, specimens well suited to satisfy even the most fastidious taste. In-curved, out-curved, plumed and curled, of beautiful ivory white, of creamy white, of dead white, or of the old whiteness—blossoms of crimson, of rich golden amber, of every shade that is most beautiful and charming to the eye. Here, indeed, is a wondrous change over the old specimens

of long ago. Whether or no our readers be of the class who are Chrysanthemum lovers, we decide to give a few hints as to their culture, and leave it to these same readers to follow in our wake or not.

Our plan is to take the new shoots found about the old plants in the spring, setting them out in the garden beds some twelve inches or more apart, keeping each variety to itself. Then as they grow, to keep pinching in the ends, thus keeping them in good shape all the summer, so that by fall there is a perfect and shapely tree all ready for the flowering part, its own fulfillment in the plan. We take them in, potting without disturbing the roots, as soon as the buds are well developed. They must then be kept in a shaded spot for a week or two. Great care must be taken at this time to give plenty of water. The flowers are quite an addition to the window, and last longer and are better developed than if left in their out-door bed. After blossoming the pots can be set in a dry cellar until spring. When brought up they soon develop the young shoots for summer bedding.

H. K.

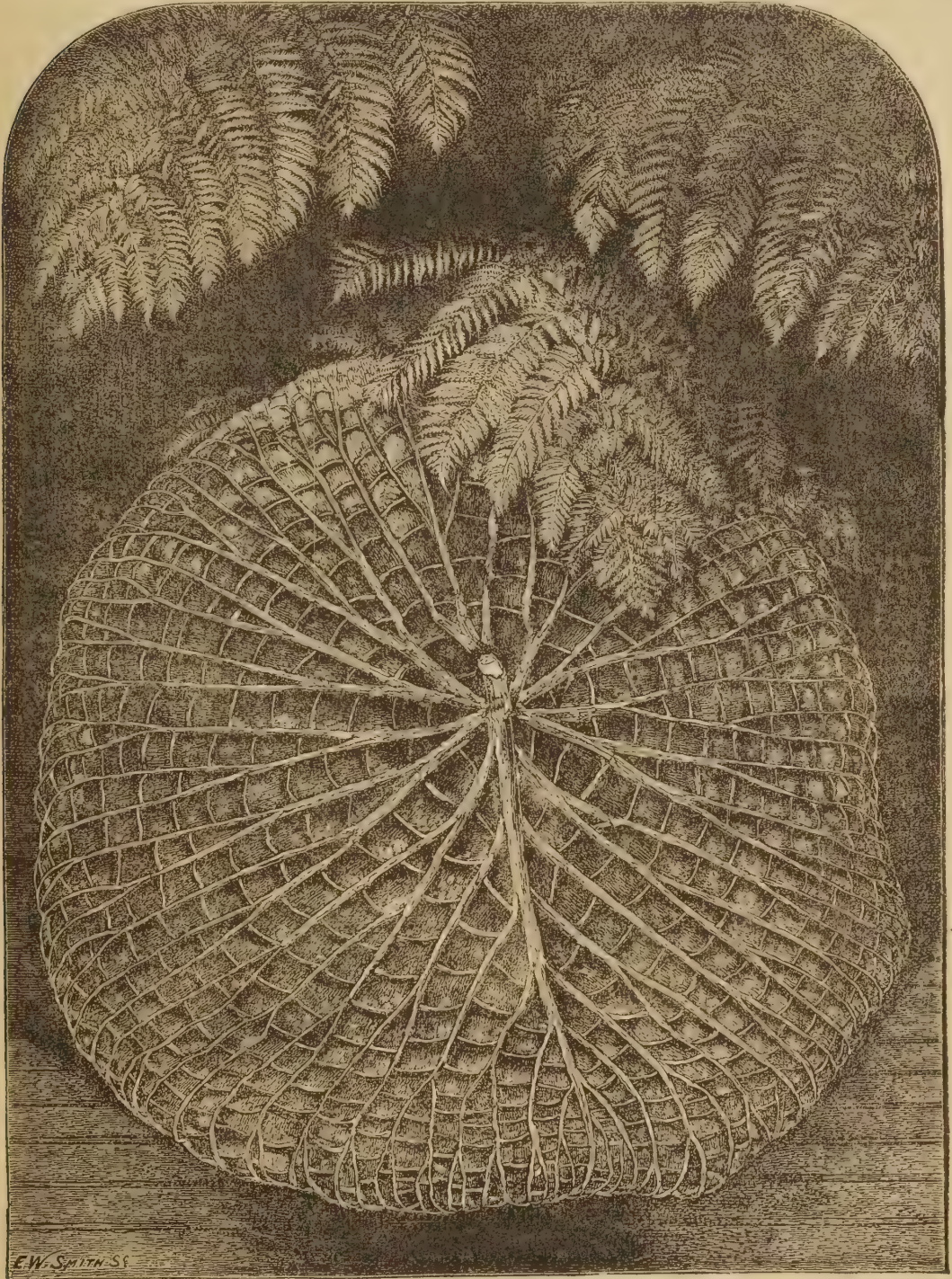
PLANT NOTES.

Last winter was my first experience with *Triteleia uniflora*, and I have since wondered why this inexpensive, free-flowering bulb was not more generally cultivated. I treated it exactly as I did my *Freelias*, only I put fifteen to twenty bulbs in a six-inch pot, about the 15th of October, and let them remain in a cool greenhouse until December 15th, after which they were placed in a house with night temperature about 55°. The flowering season lasted fully three months, and such quantities of flowers. The foliage emits rather an unpleasant odor, but this is seldom noticed unless when they are moved or the roots disturbed. The bulb can be kept from year to year, same as *Freelias*, and multiply rapidly.

Anthemis coronaria fl.-pl., or double Yellow Marguerite, has proved one of the most satisfactory of new plants with me. It propagates as readily and easily as the *Coleus*; flowers profusely both in the greenhouse and in the border. I find the double yellow flowers very useful. Like *Impatiens*, it is always in bloom during the season for selling plants, consequently will be prized by florists. LEVANT COLE.

THE VICTORIA REGIA.

In honor of the fiftieth year of the reign of VICTORIA, nothing could be more appropriate as a memorial than the blooming of the Victoria Regia, and this has been done at Cherkley Court, England. The engravings in this number, showing



VICTORIA REGIA, UNDER SIDE OF LEAF.

the plants, have been prepared from the original ones which appeared in the *Gardeners' Chronicle*. The children, one sitting and one standing on a leaf, show the comparative size and strength of the leaves.

This wonderful plant is a native of Guiana and Brazil, under and near the equator,

and is found growing in tranquil basins of the rivers, and in shallow bays and ponds. It was discovered in 1837, and first bloomed in England in 1849. In this country the first to raise it was CALEB COPE, of Philadelphia, in 1851, when it was considered a great feat of horticultural enterprise for an amateur, as it certainly was. The following description is taken from an account of it as published in the *Horticulturist* the following year :

"On the 21st of last March, Mr. COPE planted in seed-pans four seeds obtained from England, through the kindness of Sir WILLIAM J. HOOKER. Three of these grew, and one of the plants was, on the 21st of May, transferred to a circular basin



THE VICTORIA REGIA AT CHERKELEY COURT.

about twenty-five feet in diameter, enclosed in a glazed house erected expressly for the purpose. There it has been kept in water maintained at the tepid temperature of 76° to 85° Fahrenheit. The depth of water in the tank or basin is about two and a half feet, and the oozy soil at the bottom, into which the roots of the plant expands, is about the same depth. It is worthy of notice that the first leaves produced did not exhibit the turned-up edge, or salver-shape, which contributes such an uncommon appearance to the plant, until about twenty-four had grown. Ever since that period the leaves have been salvered as quickly as they expanded. The development of a leaf, on first raising to the surface of the water, presents a most curious sight, not easily described. Rolled into a body of a brownish color, and covered with thorny spines, it might readily be taken for some large species of sea-urchin. The under side of the leaves, as well as the long stems, by which the flowers and leaves seem anchored in the water, are thickly covered with thorns about three-quarters of an inch long. On the 21st of August, just five months from planting the seed, a flower was developed, and the success of the interesting enterprise thus fully crowned.

"As yet Mr. COPE has brought forward only one of the three plants produced from the four seeds. But this has continued not only to keep his tank, large as it is, always covered by its immense leaves, some measuring six and a half feet in diameter—many of which have from time to time been removed and replaced by fresh

ones—but also furnished two flowers a week since first blooming. Some of these flowers have measured seventeen inches in diameter. The petals always open early in the evening, and partially close about midnight. During the daytime, therefore, the *Victoria Regia* is seldom seen in fullest splendor, unless when removed from the parent stem.

“If the development of the leaves of the *Victoria Regia* present such a singular appearance, the successive movements or changes in the flower are not less extraordinary and far more beautiful.

“The crimson bud, which for several days has been seen rising, at last reaches the surface and throws off its external investment in the evening, soon after which the flower petals suddenly unfold, the expanded blossom, like a mammoth *Magnolia*, floating upon the surface of the water, decked in virgin white, and exhaling a powerful and peculiar fragrance which has been compared to the mingled odors of the Pineapple and Melon. On the morning of the second day another change is observed and the outer petals of the flower are found turned backward or reflexed, leaving a central portion of a conical shape surrounded by a range of petals, white on the outside but red within. A slight tint of pink is discernible through the interstices of these petals, which increases as the day advances. In the evening, about five o'clock, the flower is seen to be again in active motion preparatory to another production. The white petals, which were reflexed in the early part of the day, now resume their original upright position, as if to escort their gay colored companions surrounding the central cone to the limpid surface below. After this the immaculate white of first bloom changes to gay and brilliant pink and rose colors. Finally, a third change ensues, marked by the spreading of the petals further backwards, so as to afford the enclosed fructifying organs liberty to expand. These are soon seen to rise, giving to the disc of the flower a peach-blossom hue, the stamens and pistils at the same time assuming a figure not unlike that of the old regal crown of England. On the third day the flower is nearly closed. All the petals seem suffused with a purplish pink; the coloring matter, which was originally only seen in the center,

having apparently penetrated the delicate tissues of the whole flower.”

The great strength of the leaves is due to the well woven network of veins, as seen on the under side in the illustration. This plant is associated botanically with the *Nuphars* and *Nymphæas*, the Water Lilies of our ponds and streams. The seeds of the *Victoria Regia* are said to be used for food in South America, being commonly roasted with Maize, or Indian Corn, and the name of Water Maize is there applied to the plant.

POTATO ONIONS.

In reply to inquiry on page 241, I will say, I have grown Potato Onions for twenty years for our family use, and generally plant a part in the fall for early use. Soil is a strong clayey loam, heaves some. Use a place fairly, I manured in the past spring with no additional manure in the fall. I plant in November usually, so they can get a little start before the ground freezes. Plant only the small sets, cover an inch or a little more, packing the earth firmly around the bulb, but care must be taken that it be not bruised in any way, as that will surely make it rot. It is a variety inclined to rot with me more than many others.

C. C., *Kelley's Island, Ohio.*

DEATH TO MILDEW.

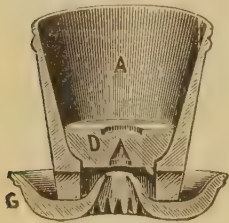
Early in July we treated a vine on which mildew had commenced to work, both on leaves and fruit, with sulphide of potash, with the result that the fungus was immediately destroyed, and to this time it has not again appeared. The vine was syringed with a solution of the sulphide, one ounce to four gallons of water. The mildewed places now appear on the fruit as blackish and well defined spots. The fruit has gone on and developed, apparently without check. Here then, is an agent that can be employed to check and destroy one of the worst foes vine-growers have had to combat. As we have at different times stated, the value of sulphide of potash for the destruction of mildew on vegetation, giving also cases in proof of its effects, we hope that some of our reader may have tried it on mildewed vines the past season, and if so, that they will give us their experience with it. The editor of the *Orchard*

and Garden, in his last issue, makes the statement that the French sulphate of copper and lime remedy, recommended by the Department of Agriculture, does not prevent mildew, and that it is developing and spreading on vines to which it has been applied. Our advice is to try sulphide of potash.

A NEW INVENTION.

We give below a description and illustrations of a newly invented flower pot, named the Paragon, which the inventor describes in the following language:

Fig. 1 represents a sectional view of the pot, A, which has a large opening giving quick and perfect drainage and thorough aeration, thus preventing sour soil. A moveable bottom, D, loosely fitted on an inside shoulder, serves instead of crock, and is elevated to keep the roots above standing water.



Its top is hollowed to receive volatile fertilizers, whose vapor in its most attenuated form permeates the soil. It is grooved, to facilitate the escape of surplus water; porous, to supply moisture for the plants in case of casual neglect; and its under side has a cavity for keeping firm the plant while under examination, and which is also a constant barrier against all creeping things.

The saucer, G, is glazed, or otherwise rendered impervious; has a central duct, and its grooved lower surface prevents the gathering of dampness or mold. When containing water, it forms a water seal, as an additional barrier; acting also as a reservoir, from which the plant, by capillary action of the porous pot, supplies itself with all needed moisture. A humid atmosphere surrounding the plant is the desirable result of the evaporation induced by this arrangement.

Fig. 2 shows the standard, K, made of iron with revolving head, L, (enamelled

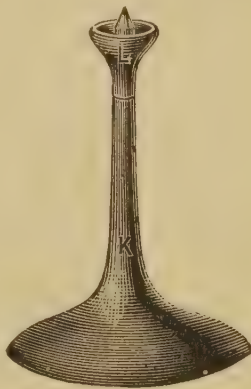


FIG. 2.

to prevent rusting,) and used in examining or re-potting.

Fig. 3 illustrates the manner of using. For examination, the pot is placed on the top of the revolving head or standard, K, when pressing the pot down leaves the plant with its roots and soil exposed to view, and easily revolved by the thumb and finger for inspection. If to be repotted, remove the plant and substitute a new plant in place of the old, with an inch of fresh soil placed on the top of the new bottom; return the plant, raise the new pot, filling the vacant space



FIG. 3.

with new soil, and the operation is finished, without the least injury to leaf, limb, or flower, of the most tender or over-hanging plant.

Fig. 4, a porous mulch, in two parts, is laid on the surface soil, to prevent too rapid evaporation; and greatly promotes the preservation and fine appearance of plants used for decoration or the table.

For Orchid cultivation the Paragon is peculiarly adapted, the thickness of the moveable bottom being increased to advantageously furnish the quantity of crock required, and is so formed as to hold the roots firmly, and without disturbance in re-potting. Thus is provided

an ample supply of the humidity and moisture so essential to the full Orchid development.

The pots are so constructed as to protect the roots of plants from the scorching rays of the sun, and from being chilled by rapid evaporation —



FIG. 4.

points usually overlooked.

The pots are made of various materials and sizes, and will be for sale as soon as arrangements for their manufacture shall have been completed.

RASPBERRY GOLDEN QUEEN.

The Golden Queen Raspberry has maintained its reputation, this year, as a very productive variety, of good quality.



RASPBERRY GOLDEN QUEEN.

It will probably be favorably received by some amateurs in order to contrast its color on the table with the red and the black varieties; but as a market fruit it will not be likely to be in great demand, as a bright red fruit is most preferred. It is said to be a seedling from the Cuthbert, and is, no doubt, a vigorous, hardy plant, capable of bearing large crops. We should like to have expressions of opinions from any who may have tested it.

WAX PLANT.

Will you tell me what treatment a Wax Plant wants? Does it need repotting often? I have one seven years old, and it has just been in bloom. What fertilizer can be used with it? It did not bloom last winter.

M. H., *Milo Centre, N. Y.*

For one who has kept a Wax Plant seven years, not much instruction is ne-

cessary. It must not be expected to bloom in winter. It can be repotted each spring, just before growth commences. It needs but little, if any, manure. A soil composed of good loam and some leaf-mold and sand is sufficient. If manure is used, it can be a little well rotted cow-dung.

CHARMS OF PLANT GROWING.

I wish to thank you for the pleasure I experience in the reading of your MAGAZINE. Innate with me is the love of nature in plant life and flowers, the wild woods with their birds and loveliest of flowers. The bouquet cannot equal the perfect plant and the pleasure of growing it. And in my old age I find myself more than ever athirst for all the charms of plant-growing and flower-raising, both the new and the old of the floral creation. But I should so like to find the Roses and Lilies of my childhood, the Yellow Sweet Brier, the Damask, the Cabbage, and the White Rose, the last towering above my head with

its weight of bloom, which were gathered into baskets in the early morning to be sent to the distiller's, to be returned as rose-water, in bottles, with a cork of corn-cob. But where are such Roses now? The Custard Lily, so called from its color, the modern title I would like to know; then I would like to know the proper name of the very common Lily, now (July 12th) in bloom, sometimes seen on the country roadsides, orange color, nearly. I do not understand the name Austrian Briers, used in your MAGAZINE.

Which is the best chemical fertilizer for a sandy, gravelly soil, for flowers?

M. M. M., *Englewood, N. J.*

The common Lily mentioned above as in bloom in July, is probably *Lilium Canadense*. The Roses, Harrison's Yellow and Persian Yellow, are varieties of the Austrian Brier.

Old stable manure is a much more valuable fertilizer for flowers on a sandy, gravelly soil than any artificial compound of chemical products.

A GOOD FOUR O'CLOCK.

Your MAGAZINE is always a welcome visitor, and has helped to cheer many a weary hour the last seven months past, which I have spent entirely upon my bed.

We have many beautiful flowers, although our garden is not very large, but each day furnishes a fine bouquet for the stand by my bedside. A long flower-bed, which my window overlooks, has one plant treated as I never heard of any one doing but myself, and I feel like telling you about it. A common Four O'Clock now measures four feet nine inches high, and four feet eight inches across. In the afternoon it is one mass of flowers, and so continues until eight o'clock the next morning, a dazzling sight. It has been grown to this size by taking up the root and putting it away with the Dahlias in the cellar, in the fall. This is its fourth year, and it grows larger and more beautiful each year. Our garden does not look as I would like to have it, but it misses my own daily attendance, yet I am favored with a good gardener at times, but that is not like constant attention, and now, in my eighty-fourth year, it is still an object of much interest.

MRS. M. J. M., *Poughkeepsie, N. Y.*

AN OFFER TO NEW SUBSCRIBERS.

In order to increase the usefulness of the MAGAZINE, we make the following offer to new subscribers:

For one dollar and twenty-five cents, the annual subscription price, we will send the remaining numbers of this year, commencing with either July or August,

and the whole of 1888. Our friends will please show this offer to their neighbors, and interest them in beautifying their homes and grounds.

We are very sure that many will avail themselves of this offer if they learn of it, and it only needs that our readers should bring it to the attention of their friends, and express their own good opinion of the MAGAZINE. Please act at once, and do not postpone.

ASHES FOR VINES.

Mr. PHILLIPS, President of the West Michigan Horticultural Society, says: "For vineyards, all things considered, I regard unleached ashes the best fertilizer known. A ton of hard wood ashes contains three hundred and twenty pounds of potash, worth sixteen dollars; one hundred and five pounds of phosphoric acid (insoluble), worth five dollars and a quarter. Omitting all the other ash constituents, which have some value of themselves, the potash and phosphoric acid of a ton of such ashes are worth twenty-one dollars and a quarter, or nearly six times the value of a ton of fresh horse dung."

GYPSOPHILA.

Can you tell me what to do with my Gypsophila to make it bloom? This is the third year that I have kept it, and no flowers. It grows finely. Think I shall pull it up. I don't want anything that don't bloom.

MRS. I. S. O., *East Haverhill, Mass.*

This plant is probably Gypsophila paniculata. It is of a very fine, light, feathery habit, and blooms freely. Can it be that its very minute flowers are overlooked, or undistinguished by our inquirer?



OUR YOUNG PEOPLE.

CRAVING ADVENTURE.

Blanche and May, two dear young friends, found themselves one late afternoon about three miles from home, driving a trusty pony on a broad highway, when, coming to an unknown by-road, Blanche checked her horse and proposed they should drive in that direction.

"It's so dull," she said, "going back the same way we came. This road is sure to lead us across to another that will take us back to town, and I'm tired of always knowing just what's before me. I like to be expectant of something new, or strange, or beautiful. Are you afraid to try it?"

"No, indeed," answered May, "it will be charming to get off that gleaming turnpike, and perhaps we may come to a marsh. I want something new for my aquarium. I'm tired of the same old things." And then she began singing,

"The way was new, and pleasant, too,
By stream and forest winding,
The sky was fair, and every where
New pleasures they were finding."

"But supposing," suggested Blanche, "that when we have gone too far to turn about and reach home before dark, that we still have found no road leading to town."

"That's not probable; anyway there'll be a moon. For my part I wish we could get lost outright. It's so tame, never having anything to happen."

At this bold wish for adventure, Blanche laughed merrily, and saying, "Then here we go," turned into the cross-road. The horse's feet struck softly on the mellow ground, the grating sound of the wheels on the gravel was lost, and the abrupt little hills over which they soon began to pass were only a pleasing change after the long stretches of level road they had left. The pony tossed up his head and shook out his mane as though glad to be rid of the jar of each thud of his feet on the hard turnpike. Swarms of yellow butterflies hovered over the pools near the fence corners on one hand, while on the other was a row of velvety Mulleins

marshalled along a line of upturned sod, where a ploughshare had spoiled the pools.

"How strange," said Blanche, "that the seeds of these Mulleins should have lain dormant so long below the sod and then spring up like that as soon as they were brought near the surface."

"I think so," responded May, "but how do you suppose they got there in the first place?"

"I can tell you, because I often take drives with my father, and am always asking him questions. He says the seeds were probably covered too deeply to vegetate at the time the road was first made; and that while the seeds of some plants soon decay, those of many other kinds retain their vitality for years, like the Mullein."

"Well, I'm glad to have learned this much. I ask questions, too—have asked a dozen persons why the very large trees, especially Sycamores, that grow along streams are always leaning very far toward the water, or over it, with immense branches reaching in that direction, while the opposite limbs are much shorter. I have pointed out such trees growing on a dead level forty or fifty feet above a small stream running through a gorge below, while the same kind of trees, when quite away from water, grow upright and symmetrical, and no one has ever given me a satisfactory reason for the difference."

"What were some of the reasons?"

"One was, that the roots naturally seek water, and that the tops always grow in sympathy with the roots. Another was, that the reflection of sunlight on the water attracted the growing trees."

"This reason," interrupted Blanche, "is the very one father gave me when I asked him the same question, and I was waiting to see if you'd been told the same thing. But I was not satisfied, and it seems that neither was he, for he kept thinking of the matter until when the true reason occurred to him he felt quite



"THE WAY WAS NEW, AND PLEASANT, TOO,
BY STREAM AND FOREST WINDING."

foolish, he said. Now you'll see it instantly, if you will only imagine this country as it was when these great trees were young—a dense forest, always dim with shade. But wherever the trees had to stand apart to let a stream run through, the shining sunbeams were let into the space, and all the trees along the line would grow out into those sunbeams rather than into the shade behind them—just as our window plants reach for the stronger light outside."

"Well, at last," exclaimed May, "I've heard a sensible reason for these leaning trees, and am satisfied. But see here, my dear, we're not getting lost, nor likely to, that I can see."

"O, well, if we can't get lost," said Blanche, "we must be resigned to the very common-place condition of knowing where we are, and make the most of this lovely drive. Just look at those lovely marsh black-birds—what beauties they are! their jet plumage so very glossy, and the red spots on their wings so intense! But the marsh that attracts them is across the field yonder. Your aquarium will have to wait. And here is a monstrous Thistle, with a circle of long grass about it, untouched by timid noses. And there is a community of Milkweed; what curious pods they have—their internal construction is a study. And now we come to a Grape vine bower, pretty

enough for a royal domain; and yonder is the tall stump covered with Ampelopsis, whose trailing ends are blowing from the top. And see, there's a stretch of woodland in the distance, and this road seems to lead into it."

"Yes," interposed May, "and there's a neat little house of hewed logs nearly covered with vines and climbing Roses. Let's pretend we're lost, anyway, and call there to inquire our way to town."

"I fear," answered Blanche, "they'd think we are simpletons; but we might stop and try to engage some fowls of them and then inquire our nearest way home, for the sun is getting low, you see."

So the pony was turned up to the "big gate" and secured, after which the girls started across the wide space between the road and house. Flocks of mixed poultry were taking a last hasty pick before seeking their roosts, and from among them two mammoth gobblers, with trailing wings a-spread and noisy threats a-gobble, terrified May by running defiantly toward her. She screamed and ran forward to gain refuge in the house, while Blanche, following and laughing, called out:

"It's your red shawl; drop it!"

Off her shoulders it fell, while she rushed on to the door, and came in startling contact with a bright-looking young woman, who was herself hurrying to learn the disturbance. Blanche joined them, and laughing introductions and apologies followed on the part of our girls, while the stranger gave her own name, remarking that she was quite ashamed of the ill manners of her gobblers, which seemed to have very indistinct ideas regarding the fatality of Thanksgiving Day for unruly turkeys.

The girls were at once charmed with Miss "Flora's" pleasant manner and fluent speech, and soon learned that she had been educated in their own town, also that she was quite alone just then, her brother and only companion having gone to fell a tree for some special purpose. He had been teaching, she said, and the farm had been rented out; but during this vacation they were trying how it would seem to live there permanently.

The girls declined going in, and May, having forgotten her desire to get lost, eagerly joined Blanche in questions as to the nearest way home, and when leaving

joined her also in an earnest invitation to Miss Flora to call on them when in town, and they in return promising to visit her; assuring each other as they drove away that it would be delightful to spend a day there occasionally.

Having learned that just beyond the woods was the road they sought, they drove gaily on and soon penetrated its sylvan depths, redolent with refreshing odors, while admiring the level arrows of yellow sunlight that shot through the trees and lighted up the spaces with golden radiance.

Suddenly, while going down a short declivity, the curved end of the shaft fell with a thwack to the ground. The intelligent horse stopped and braced himself, looking back, as if to say, "I'll just wait while you fix up matters." May was all in a tremor of fright and apprehension, but the cool-headed Blanche soon discovered that the pin that held the shaft in place was missing. So, leaving May in charge, she went back in search of it, and after some minutes returned with it, explaining to May that the nut, which screwed on to the headless end of the pin and held it in place, she could not find. Lifting the shaft in place and replacing the pin, she tore off a handkerchief hem for a string and wound the end, as the best that she could do. But few paces had been taken until the pin jarred out, and down went the shaft again. May was in despair and bewailed their dilemma, until Blanche exclaimed:

"May, do hush! You were eager for adventure, and now that you have one you're not satisfied. Please lift the shaft while I turn the horse to one side and hitch him, for I want you to go back with me and help look for that nut. You see, the pin won't stay in without it, so it can't be as far back as I feared."

The truth is, Blanche had fancied, while looking for the pin, that she heard some unusual sound in the woods near by, and was afraid to return alone. On reaching the same place she heard it again, faintly, but sure, and calling May's attention to it, they stepped to the edge of the trees and listened until they were convinced that it was a human voice moaning with pain. Both were terrified now, and Blanche, grasping May's arm, drew her in the direction of the sounds. Soon they discovered a fallen tree, whose great

hollow trunk had evidently proved deceptive, and both exclaiming, "*Flora's brother!*" rushed near enough to see the form of a man beneath an immense limb, his head rolling from side to side in a delirium of pain. Hastily approaching him in an agony of anxiety, they besought him to direct them to the nearest assistance, but he was utterly unconscious of their presence. In reply to May's impetuous suggestions, Blanche answered:

"No, no; the sister cannot help him in the least. We must get some men immediately."

"But the shaft!" said May, crying and wringing her hands.

"Sure enough; oh, dear, what *shall* we do? Be quiet, please, and let me think," and grasping her forehead tightly a moment, she exclaimed, "Our hair pins! they'll do," and starting on the run they drew the pins from their falling hair, and upon reaching the buggy May untied the pony, while Blanche thrust the long, compressed pins through the replaced shaft and bent the ends securely upward. Springing to their seats they drove furiously forward, and just outside the wood-

land came to a farm house, where the owner and his "hands" were just gathered for supper. They had seen the wet and panting horse approaching, and only a word was needed until axes, ropes and crow-bars were secured, and mounted men hurried to the rescue. A wagon with a bed soon followed, doctors were sent for, and then, leaving May, Blanche took the farmer's good wife and hastened back to prepare Miss Flora for what was before her, and to render such assistance as might be needed.

Blanche remained until the next day, the farmer kindly offering to take May to her home, and explain Blanche's absence to her parents.

After many months of critical illness the young man gained the use of his limbs once more, and before Blanche's visits of ministration were ended, a permanent friendship had been established between herself and Miss Flora.

As for May, she has often declared that she never again shall wish for adventure, but that if things will only go on in a safe, common sense way she shall be quite satisfied. MARIA BARRETT BUTLER.

APPLE BLOSSOMS.

Grandpa was dead, and they told the child
That flowers would be out of place
On the casket which held his aged form,
Or about his wrinkled face.

But he had loved flowers, and she could not see
Why blossoms should not be strown
Over one who had loved them tenderly,
Now that his life had gone.

So, she secretly gathered the Apple blooms,
And wreathed his silvery hair;
In the hand that lay upon his breast
She placed sweet flowers with care.

Then she smiled, as she spoke with perfect faith,
That gift to innocence given,
"Come and see grandpa; I gathered the flowers,
And he's blossomed all out for heaven."

A. S. PARKER, *South Coventry, Conn.*

EDITOR'S MISCELLANY.

MEETINGS OF SOCIETIES.

On the fourteenth of the present month the American Pomological Society convenes at Boston, Massachusetts, and a large gathering of fruit-growers and horticulturists is expected, and an interesting and profitable session will undoubtedly be held. This month is a busy one for most fruit-growers, and many will necessarily be absent from the meeting who might otherwise attend. Those who can go will be amply repaid for their trouble by what they see and hear.

The New York State Fair will be held in this city from the 8th to the 14th of this month. Judging from the entries that have been made, it will be the grandest show ever seen in this State. The exhibit of horses, cattle and other animals is expected to be very large, the display of agricultural implements

will be complete. Never was there a finer promise of a great exhibit of flowers and fruits. The prizes offered to children for a show of flowers will bring out a great display from that source. The Society is now under excellent and energetic management, and everything possible will be done for the comfort and convenience of exhibitors and visitors. Farmers, gardeners, fruit-growers, bee-keepers, mechanics, and everybody besides, should come out and see such a display as only New York State can make.

Some of the other principal Fairs this month are those of Illinois, at Olney, from the 24th to the 30th; Indiana, at Indianapolis, 19th to 24th; Iowa, at Des Moines, 2d to 8th; Kansas, at Topeka, 19th to 24th; Michigan, at Jackson, 19th to 23d; New Jersey, at Waverly, 19th to 23d; Pennsylvania, at Philadelphia, 5th to 17th; Wisconsin, at Milwaukee, 12th to 16th; Ontario, Canada, at Ottawa, 19th to 24th.